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RESEARCH MEMORANDUM

AERODYNAMIC CHARACTERISTICS AND PRESSURE DISTRIBUTIONS OF A 6-PERCENT-THICK 49° SWEPTBACK WING WITH BLOWING OVER HALF-SPAN AND FULL-SPAN FLAPS

By Edward F. Whittle, Jr., and H. Clyde McLemore

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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

WASHINGTON

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AERODYNAMIC CHARACTERISTICS AND PRESSURE DISTRIBUTIONS OF A 6-PERCENT-THICK 49° SWEPTBACK WING WITH BLOWING OVER HALF-SPAN AND FULL-SPAN FLAPS

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SUMMARY

An investigation has been conducted in the Langley full-scale tunnel to determine the effects on the aerodynamic characteristics and on the chordwise and spanwise load distributions of blowing a high-energy stream of air over two trailing-edge flaps of a 49.1° sweptback wing. The wing had an aspect ratio of 3.22, a taper ratio of 0.64, and NACA 65A006 airfoil sections parallel to the plane of symmetry. Low-pressure, high-mass-flow air, representing a jet-engine tailpipe bleed system, was blown over a half-span flap deflected 70° and a full-span flap deflected 65°. The tests were conducted in a Reynolds number range from 3.0×10^6 to 7.5×10^6 corresponding to a Mach number range from 0.05 to 0.12, respectively. The momentum-coefficient range investigated was from 0.08 to 0.38.

Maximum blowing for a half-span flap gave a lift coefficient of 1.43 at zero angle of attack and a maximum lift coefficient of 2.20 with a slat and fence installed. The maximum lift coefficient obtained for blowing over a full-span flap with slat and fence installed was 2.25; however, the full-span blowing produced pitching moments that were approximately double those obtained with half-span blowing.

INTRODUCTION

The reduced lift capabilities of conventional high-lift devices when applied to sweptback-wing aircraft having high wing loadings constitute a severe low-speed performance problem. Increased emphasis is being given to the application of boundary-layer control as a means for increasing the maximum lift capabilities of these aircraft.

The blowing method of boundary-layer control has shown considerable promise as a practical method of increasing lift since the jet-propulsion engine has made available a convenient source of the required high-pressure air. The jet engine, as a source of air, may be used in two ways. High-pressure air may be bled from some stage of the engine compressor. Five to eight pounds of air per second is considered the maximum that can be bled in this way from present-day engines. In the past few years, most of the research and development in both two- and three-dimensional applications have made use of this high-pressure type of bleed system. The alternate approach, proposed in reference 1, is bleeding a larger mass flow at lower pressures from the tailpipe behind the turbine.

A very preliminary approach to the application of such a low-pressure bleed system of blowing was reported in reference 2. The investigation reported herein was initiated to define further the effects on the aerodynamic characteristics and load distributions of a thin, highly sweptback wing of a low-pressure blowing system and also to provide information on which to base a more thorough study of a complete airplane configuration.

This investigation was conducted in the Langley full-scale tunnel on a semispan 49.1° sweptback wing having a taper ratio of 0.64, an aspect ratio of 3.22, and NACA 65A006 airfoil sections parallel to the plane of symmetry. Force and pressure measurements were obtained with a slat and fence installed and with blowing over a half-span flap deflected 70° and a full-span flap deflected 65° through a range of momentum coefficients from 0.08 to 0.38. A few tests were made with blowing over a half-span flap deflected 70° at a value of momentum coefficient of 0.37 with and without a slat and a fence installed. The tests were made in a Reynolds number range from 3.0×10^{6} to 7.5×10^{6} corresponding to a Mach number range from 0.05 to 0.12, respectively. Because of the limited capacity of the blower, the high Reynolds number range included only the lower values of momentum coefficient investigated.

The results obtained in this investigation are valid for the momentum-coefficient range investigated for subsonic jet velocities; however, it is not known whether the same results would have been obtained for the momentum-coefficient range investigated if supersonic jet velocities had been used.

COEFFICIENTS AND SYMBOLS

All coefficients are computed as though a complete wing was used in the investigation.

C_L lift coefficient, $\frac{\text{Lift}}{q_o S}$

$C_{L_{\alpha=0}}$ lift coefficient at $\alpha = 0^{\circ}$

$C_{L_{max}}$ maximum lift coefficient

C_D drag coefficient, $\dfrac{\text{Drag}}{q_o S}$

C_m pitching-moment coefficient about quarter chord of mean aerodynamic chord, $\dfrac{\text{Pitching moment}}{q_o S \bar{c}}$

C_Q flow coefficient, $\dfrac{Q}{V_o S}$

C_μ momentum coefficient, $\dfrac{Q \rho_j V_j}{q_o S}$

c_n section normal-force coefficient normal to undeflected chord line

P pressure coefficient, $\dfrac{p - p_o}{q_o}$

b wing span, ft

c local wing chord measured parallel to plane of symmetry, ft

c' local wing chord measured normal to line through 0.54c, ft

$\bar{c}$ mean aerodynamic chord, $\dfrac{2}{S} \displaystyle\int_0^{b/2} c^2 dy$, ft

y spanwise distance measured perpendicular to plane of symmetry, ft

c_{av} average chord of wing measured parallel to plane of symmetry, $\dfrac{S}{b}$, ft

c_f local trailing-edge-flap chord measured parallel to plane of symmetry, ft

c_s' local slat chord measured perpendicular to line through 0.54c, ft

c_s local slat chord measured parallel to plane of symmetry, ft

x chordwise distance, parallel to plane of symmetry, from leading edge of wing section, ft

x_f chordwise distance, parallel to plane of symmetry, from leading edge of flap section, ft

x_s chordwise distance, parallel to plane of symmetry, from leading edge of slat section, ft

y_{cp} spanwise location of wing center of pressure, ft

p local static pressure, lb/sq ft

p_o free-stream static pressure, lb/sq ft

q_o free-stream dynamic pressure, lb/sq ft

S area of wing, sq ft

R Reynolds number, $\frac{\rho_o V_o \bar{c}}{\mu}$

V_o free-stream velocity, ft/sec

V_j velocity of air blown out of slot ahead of flap, ft/sec

ρ_o mass density of free-stream air, slugs/cu ft

ρ_j mass density of air blown out of slot ahead of flap, slugs/cu ft

μ coefficient of viscosity of air, slugs/ft-sec

Q quantity of air blown out of slot, cu ft/sec

α angle of attack, deg

δ_f flap deflection (relative to wing-chord plane) measured perpendicular to flap hinge line, deg

δ_s slat deflection (relative to wing-chord plane) measured perpendicular to wing leading edge, deg

MODEL AND APPARATUS

Model

The geometric characteristics and principal dimensions of the semispan wing are given in figure 1 and details of the slat, fence, and blowing slot are given in figure 2. Figure 3 is a photograph of the wing mounted on the reflection plane in the Langley full-scale tunnel. A description of the reflection plane is given in reference 3. The wing has 49.1° of sweepback at the leading edge, an aspect ratio of 3.22, a taper ratio of 0.64, and no geometric twist or dihedral. The airfoil sections parallel to the plane of symmetry are NACA 65A006 sections and the wing tip is half of a body of revolution based on the same airfoil-section ordinates.

The high-lift and stall-control devices used (see figs. 1 and 2) are: a 0.266c' (0.24c streamwise) inboard trailing-edge flap having a span of 0.54b/2 (0.16b/2 to 0.70b/2, half-span flap); a 0.266c' (0.24c streamwise) trailing-edge flap having a span of 0.84b/2 (0.16b/2 to 1.00b/2, full-span flap); a 0.15c' (0.175c streamwise) leading-edge slat having a span of 0.57b/2, measured inboard from the wing tip; and a fence having a height of 0.03c and located at spanwise stations, measured outboard from the plane of symmetry, of 0.30b/2 or 0.43b/2.

The nose and upper surface of the sheet-metal slat (fig. 2) is not an integral part of the wing but is mounted onto the unmodified leading edge of the wing with the slat brackets alined normal to the leading edge of the wing.

Just ahead of the trailing-edge flap is a slot (fig. 2) which opens into the upper portion of the gap between the wing and the flap. The slot is used for blowing a high-energy stream of air over the upper surface of the flap. With the blower off, the slot gap was approximately constant with an average value of $0.0024c_{av}$. With the blower operating at its maximum flow quantity and pressure rise, the slot gap expanded to about $0.0027c_{av}$. The resulting average velocity of the air issuing from the slot ahead of the half-span flap was 517 ft/sec and from the slot ahead of the full-span flap was 440 ft/sec.

Chordwise pressure orifices parallel to the plane of symmetry were located on the upper and lower surfaces of the wing and flaps at spanwise stations of 18, 39, 60, 72, and 93 percent of the semispan. Chordwise pressure orifices parallel to the plane of symmetry were also located on the upper surface of the slat at spanwise stations of 60, 72, and 93 percent of the semispan.

Apparatus

Blower and ducting.- A modified compressor of a jet engine, driven through a 2.6 to 1 gearbox by two 200-horsepower electric motors in tandem, was used as the pump for the ejected air. The compressor produced a pressure of 1.15 atmospheres and 1.10 atmospheres at the exit slot for the tests with half-span blowing and full-span blowing, respectively.

The compressed air was carried from the blower to the wing root by means of a 12-inch-diameter duct. Two mercury seals were used between the sections of ducting in order to prevent transmission of restraining forces from the blower to the wind-tunnel scale system and to provide a flexible coupling so that the angle of attack of the wing could be changed easily. At the wing root the compressed air enters a large plenum chamber which consists of most of the wing interior ahead of the exit slot. This was required to reduce duct losses to a minimum in view of the rather low pressure rise available from the test blower.

Instrumentation.- A shielded thermocouple and rakes of total-pressure and static-pressure tubes were used to measure the flow quantity during the tests.

TESTS AND CORRECTIONS

Tests

The flap on the semispan wing used in this investigation was not designed originally for use with a blowing system of boundary-layer control. Since the flap nose position varied with respect to the blowing jet as flap deflection was varied, several preliminary tests were conducted to insure that the ejected air could be made to impinge on the flap leading edge sufficient to achieve maximum jet turning with the flow fully attached to the flap surface. The flow attachment was obtained by adjustment of the blowing slot for each flap angle investigated. The flap angles chosen for the final tests were 70° for the half-span flap and 65° for the full-span flap. It will be shown later, however, that the adjustment of the slot to the flap for a high mass flow did not prove optimum on these flaps at the lowest mass flow tested. The slot geometry used is shown in figure 2. Irregularities on the leading edge of the flap, such as cutouts around hinge brackets, were faired to minimize flow disturbances behind these irregularities. Woolen tufts attached to the upper surface of the flap were found to be a great aid in determining whether attached flow was being maintained.

An index of the test conditions and configurations tested is given in table I. Pressure coefficients are presented in tables II and III. Most of the data were obtained through an angle-of-attack range from approximately -5° to 23°. Force measurements were made to determine the lift, drag, pitching moment, and spanwise center-of-pressure variation of the basic wing and the wing with various combinations of the high-lift and stall-control devices without and with blowing a high-energy stream of air over the flaps. The range of momentum coefficient C_{μ} was obtained by varying either the blower mass flow or the tunnel velocity.

Chordwise pressure distributions were obtained on the wing and flaps at spanwise stations of 18, 39, 60, 72, and 93 percent of the semispan and on the slat at spanwise stations of 60, 72, and 93 percent of the semispan.

Since, as previously mentioned, woolen tufts attached to the upper surface of the flap were found to be a very good indicator of whether the blowing air was adhering to the upper surface of the flaps, the tufts were left on for these final tests.

The tests were made in a Reynolds number range from 3.0×10^{6} to 7.5×10^{6} corresponding to Mach numbers from 0.05 to 0.12, respectively.

Corrections

The data have been corrected for airstream misalinement, blocking effects, and jet-boundary effects.

PRESENTATION OF RESULTS

An index of test conditions and configurations is presented in table I. The results of the force data are presented in figures 4 to 7, and flow observations are presented in figure 8. A summary of the lift results, as obtained from the force data, is presented in figure 9. The variation of C_{μ} with C_Q is shown in figure 10. A typical example of the effect of C_{μ} on the section chordwise pressure distribution is presented in figure 11. Section chordwise pressure distributions at five spanwise stations are presented in figures 12 to 17 and tables II and III. Spanwise loadings are presented in figures 18 to 25.

Drag

The drag data presented herein represent only the aerodynamic drag including the thrust effect of the blowing air. No attempt has been made to include the effect of the drag equivalent of the pump horsepower needed to blow the air out of the slot ahead of the flap and aileron.

Pressure Distributions

The pressure orifices on the nose of the flap at 0.60b/2 became inoperative in the early stages of this investigation. The dashed part of the flap leading-edge pressures shown in figures 12 to 17 at 0.60b/2 is an estimation based on the pressures obtained on the leading edge of the flap at the 0.18b/2 and 0.39b/2 stations. The pressure distribution on the upper surface of the rearmost part of the wing at all spanwise stations is also indicated by dashes. These pressure orifices on the upper surface of the wing at 0.75c were found to be unreliable and their pressure readings were discarded.

Span Load Distributions

Integration of the values of $c_n \frac{c}{c_{av}}$ across the span at the lowest angle of attack tested for the data presented in figures 18 to 25 gave values of C_L that agreed within 0.08 (±6 percent) with the values of C_L obtained from the force data at the same angle of attack.

It will be noted that the values of c_n used include the normal-force component of the flap chord-force coefficient. Usually the determination of c_n will be affected little if the flap chord-force coefficient is neglected. When blowing is applied to a highly deflected flap, however, the leading-edge negative pressures may be sufficiently large, as they are for this investigation (values of P up to 50 in some cases), to produce a large chord force that contributes appreciably to the wing normal force. Before the normal-force component of the flap chord force was taken into account, disagreement in some cases amounted to values of C_L of about -0.18 (-11 percent).

DISCUSSION OF RESULTS

Force Results

Lift.- The wing with blowing over the half-span flap at a value of C_μ of 0.370 produced a value of $C_{L_{\alpha=0}}$ of 1.43 and a value of $C_{L_{max}}$

of 1.77 at an angle of attack of 6.6° (fig. 5). The spanwise loadings in figure 22 show that the outboard 50 percent semispan was stalled for angles of attack greater than 6.7°. Tuft observations showed a leading-edge vortex which became progressively larger as it swept outboard and caused stall on the outboard sections.

A slat, deflected 40°, was installed in an attempt to eliminate the stall on these outboard sections. Visual observation of tufts attached to the upper surface of the wing showed that the slat turned the leading-edge vortex rearward and caused rough flow to form inboard of the slat at an angle of attack of 6.7° (fig. 8). At the same time the lift was decreased at the lower angles of attack (fig. 5). With increasing angle of attack this rough flow spread outboard, a vortex began to form along the slat at an angle of attack of about 9°, and rough flow developed at the wing tip at an angle of attack of about 14°. The outboard 25 percent semispan stalled about when the two regions of rough flow merged, at an angle of attack of about 18.5°.

In combination with the slat deflected 40°, a fence was tested at 0.30b/2 and at 0.43b/2 in an effort to improve further the flow on the wing by preventing the leading-edge vortex from spreading outboard. Though either fence delayed its outboard progression, rough flow formed because of formation of a vortex inboard of the fence and a vortex between the slat and fence, and the lift curve begins to break at an angle of attack of 6.7°. The 0.30b/2 fence increased the value of C_L more for low to moderate angles of attack, though for either fence a value of $C_{L_{max}}$ of about 2.10 was obtained at an angle of attack of 18.3°.

Tuft observations of the rough flow on and behind the 40° slat for angles of attack greater than 10° indicated that the slat angle possibly should be increased. The slat angle was increased to 44° and smooth flow was maintained on the outboard sections to an angle of attack of about 18.5° (fig. 8(b)) resulting in an increase in $C_{L_{max}}$ to a value of 2.20. Rough flow was again present inboard of the slat, and the break in the lift curve occurred approximately at the same angle of attack of 6.7°. The spanwise loadings of figure 21 show that the loading just inboard of the slat (0.39b/2) does not increase but remains constant for angles of attack greater than 10.5°. This indicates that the increase in $C_{L_{max}}$ was due to the effects caused by the slight increase in slat angle and perhaps further gains could have been realized if the optimum slat angle could have been determined; however, no further slat development was attempted, and the remainder of the slat-installed tests were made with the slat angle at 44°.

The flow on the wing as indicated by surface tufts seemed to be about the same with blowing over a half-span or a full-span flap although a value of $C_{L_{max}}$ of 2.25 was obtained for the full-span flaps at an angle of attack of 12.2° for a value of C_μ of 0.382. The loading was reduced a little on the inboard sections but was increased considerably on the outboard sections, as compared to blowing over the half-span flap at a given angle of attack (compare figs. 21 and 25.) The result was a more uniform span load distribution and greater lift. One must keep in mind here that, for a given wing momentum coefficient, the section momentum coefficients are decreased considerably when full-span blowing is used instead of half-span blowing, and the forward shift in the center of pressure (fig. 7) is probably caused by the decreased trailing-edge loading resulting from the lowered section momentum coefficients. The break in the lift curve (fig. 7) is believed to be due to the initial development of vortices inboard of the slat and the reduced section momentum coefficients over the flap.

Tuft observations showed that the flow on the wing became progressively rougher, at a given angle of attack, with increased blowing over either flap. Also the break in the lift curve occurred at a lower angle of attack with increasing C_μ (figs. 6 and 7).

These reductions in the angle of attack where the lift curve breaks seem to be clearly associated with development of rough flow inboard of the slat. The break in the lift curve probably would be delayed, if not eliminated, and $C_{L_{max}}$ probably would be increased by cambering the leading edge of the inboard sections or by installation of a full-span slat.

Reynolds number had little effect on the value of C_L for the basic wing (fig. 4). With blowing over either flap (figs. 6 and 7), however, there was an increase in C_L, about 0.1 at $C_{L_{max}}$, due to increasing Reynolds number.

It is of interest to note that the lift-curve slopes at zero angle of attack increased with increased blowing. The slope of the lift curves, at zero angle of attack, is about 0.060 for blowing over the half-span and full-span flaps at values of C_μ of 0.370 and 0.382, respectively.

The variation of $C_{L_{\alpha=0}}$ and $C_{L_{max}}$ with C_μ for half- and full-span blowing is presented in figure 9. The curves of $C_{L_{\alpha=0}}$ against C_μ are considerably different in appearance from the curves shown in reference 4 for two-dimensional tests and also from recent unpublished three-dimensional tests. The latter curves show a rapid rise of $C_{L_{\alpha=0}}$ with C_μ for very small values of C_μ after which, with the flow now unseparated over the flap, the increase in C_L with increasing C_μ is very gradual and essentially linear. In the present tests the increase in $C_{L_{\alpha=0}}$ with increasing C_μ is more or less continuous over the entire C_μ range investigated, although it does increase more rapidly in the lower C_μ range than in the higher C_μ range. The failure to achieve a sharp rise in C_L for the low C_μ range is attributed to separated flow over portions of the flap (indicated by surface tufts) caused by nonuniformity of the slot design and to interferences in the blowing duct near the slot. These regions of separated flow, which were not present for the higher C_μ range, caused the beneficial effects of blowing to develop gradually with increasing C_μ.

As previously mentioned, the curve of $C_{L_{\alpha=0}}$ plotted against C_μ should be essentially linear for values of C_μ in excess of the value required to maintain unseparated flow over the flap. Because the flow over the flap was unseparated for the higher C_μ range investigated, a short-dash line has been drawn through the higher C_μ values and extended to lower values of C_μ to indicate the values of $C_{L_{\alpha=0}}$ that should be expected in this low C_μ range when unseparated flow is maintained over the flap.

Although the slopes are approximately the same in the higher C_μ range tested, blowing over a full-span flap increased the loading across the span more effectively and produced a greater value of $C_{L_{\alpha=0}}$ than blowing over a half-span flap.

The values of $C_{L_{max}}$ obtained with blowing over both the half-span and full-span flaps are about the same for a given C_μ. Full-span blowing would probably have produced an increase in $C_{L_{max}}$ if the overall section momentum coefficients had been as large as those associated with half-span blowing; however, the added trim requirements for increased full-span blowing might have negated the increase in C_L.

Calculations similar to those of reference 2 were made to indicate the amount of blowing air required for these high values of C_μ. In order to obtain a value of C_μ of 0.168 for an airplane having a wing area equal to the present wing, a wing loading of 50 pounds per square foot, and a landing speed of about 100 knots, it would be necessary to bleed about 40 pounds of air per second from the tailpipe. Though this may appear to be an excessive air requirement, a complete study of the ducting requirements, engine installations, and other associated factors would be required to determine whether utilization of such large flows is impractical. As already indicated, large increments in lift can be attained with considerably lower values of C_μ than those investigated here, when special care is taken in detail design.

Pitching moment.- As far as trim is concerned, the value of C_m of about -0.38 obtained with blowing over the half-span flap at $C_\mu = 0.370$ can probably be trimmed by a tail of reasonable area and tail length. The value of C_m of about -0.78 obtained with blowing over the full-span flap at $C_\mu = 0.382$, however, poses a most severe problem and could not be trimmed by a tail of reasonable area and tail length unless the tail effectiveness was doubled by some means such as boundary-layer control on the tail. These observations seem to indicate that blowing over a half-span flap at high values of C_μ probably would be more compatible with the trim requirements than blowing over the full span.

As far as stability at the stall is concerned, past experience has shown that the pitch-up near $C_{L_{max}}$ and the severe unstable break at $C_{L_{max}}$ shown in figures 6 and 7 can be alleviated considerably if not eliminated by a properly located tail and suitable variations in the design of stall-control devices. Maintaining stability at maximum lift for full-span blowing, however, will be considerably more difficult than for half-span blowing.

Spanwise center of pressure.- The spanwise center of pressure generally shifted outboard with increasing C_L with or without blowing over the half-span flap at a given value of C_μ (fig. 6). For a given C_L, however, the spanwise center of pressure shifted inboard with increasing C_μ. A small opposite trend is shown for blowing over the full-span flap (fig. 7).

Pressure Results

Chordwise pressure distributions.- Pressure distributions were obtained in conjunction with the force data of figures 6 and 7 and are presented in tables II and III and figures 12 to 17.

The variation of chordwise pressure distribution with increasing C_μ is shown in figure 11 for the 0.60b/2 station at an angle of attack of approximately 11°. The high local velocities at the flap leading edge produced very high peak negative pressures of generally about $-30q_o$ for a value of C_μ of 0.370 (see tables II and III). The positive pressure gradient over the rearmost part of the flap shows that the airstream was effectively turned to flow over the upper surface of the flap as compared with separation on the surface of the flap with no blowing applied. An increase in circulation around the wing with blowing over the flap is shown by the increase in loading over the slat and wing. At this angle of attack, the slat has maintained good leading-edge flow control. It is interesting to note the favorable pressure gradient produced on the rearmost part of the wing by blowing over the flap at a value of C_μ of 0.370. Although the value of the pressure coefficient at the 75-percent chordwise location was not known, the trend of a favorable pressure gradient was definitely established by the pressure coefficients obtained at chordwise locations ahead of this point. The variation of pressure coefficient with increasing C_μ is representative of the variation at all spanwise stations, except to a lesser degree for the pressure distributions over the undeflected trailing-edge flap at the two outboard stations (figs. 12 to 14 and table II) for which no blowing was applied.

The comparison presented in figure 11 is also representative of the effect of C_μ on the variation in pressure distribution at all spanwise stations with blowing over the full-span flap (figs. 15 to 17 and table III).

Spanwise load distributions.- For both the half-span flap (figs. 18 to 21) and the full-span flap (figs. 23 to 25) with a slat and fence installed, increasing C_μ at a given angle of attack increased the loading across the entire span. Without stall-control devices installed, blowing over the half-span flap could not increase the lift over the outboard portion of the wing beyond the flow breakdown range ($\alpha \approx 7^\circ$).

Blowing over the full-span flap through the angle-of-attack range (figs. 23 to 25) produced a much more uniform loading, as compared with blowing over the half-span flap (figs. 19 to 21). As previously mentioned, the lowered section momentum coefficients associated with full-span blowing produced a somewhat lower loading at stations inboard of 0.60b/2 for a given angle of attack (compare figs. 21 to 25). The loading over the outboard stations, however, was increased considerably.

The development of rough flow near the inboard end of the slat was observed at an angle of attack of about 7° for blowing over either flap. The effect of this flow deterioration on the loading was to produce a reduction in the loading at 0.39b/2 for angles of attack greater than about 10.5°.

SUMMARY OF RESULTS

An investigation has been conducted in the Langley full-scale tunnel to determine the effects on the aerodynamic characteristics and on the chordwise and spanwise load distributions of blowing air over two trailing-edge flaps of a 49.1° sweptback wing having NACA 65A006 airfoil sections. A low-pressure, high-mass-flow system was used to blow the air over a half-span flap deflected 70° and a full-span flap deflected 65° for a range of momentum coefficient C_μ of 0.08 to 0.38. The more pertinent results are summarized as follows:

1. Without and with a slat and fence installed, a value of lift coefficient at zero angle of attack of 1.43 and values of maximum lift coefficient of 1.77 and 2.20, respectively, were obtained with blowing over the half-span flap at a momentum coefficient C_μ of 0.37.

2. With a slat and fence installed, values of lift coefficient at zero angle of attack and maximum lift coefficient of 1.78 and 2.25, respectively, were obtained with blowing over a full-span flap at a momentum coefficient of 0.38.

3. The wing was unstable at maximum lift for all configurations tested. The negative pitching moments for the half-span blowing tests were quite large, and for the full-span blowing tests the negative pitching moments were so large, approximately double those obtained with half-span blowing, that they probably could not be trimmed with a normal tail installation.

4. The lift-curve slope for an angle of attack of 0° was progressively increased with increasing momentum coefficient, to a maximum value of about 0.06 which was obtained at the highest value of momentum coefficient tested for either flap configuration.

5. The loading increased with increased blowing over either flap tested. With blowing over the half-span flap, installation of a slat further increased the loading over the outboard sections. For a given total momentum coefficient, the loading over the inboard sections was slightly reduced for blowing over the full-span flap as compared with a

given amount of blowing over the half-span flap at a constant angle of attack. The loading over the outboard sections, however, was increased considerably.

Langley Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Langley Field, Va., May 16, 1955.

REFERENCES

1. Kosin, Ruediger E.: Jet Exhaust Boundary Layer Control for Improving Landing Performance of Jet Aircraft. WADC Tech. Rep. 52-329, Wright Air Dev. Center, U. S. Air Force, Dec. 1952.

2. Whittle, Edward F., Jr., and Lipson, Stanley: Effect on the Low-Speed Aerodynamic Characteristics of a 49° Sweptback Wing Having an Aspect Ratio of 3.78 of Blowing Air Over the Trailing-Edge Flap and Aileron. NACA RM L54C05, 1954.

3. Lipson, Stanley, and Barnett, U. Reed, Jr.: Comparison of Semispan and Full-Span Tests of a 47.5° Sweptback Wing With Symmetrical Circular-Arc Sections and Having Drooped-Nose Flaps, Trailing-Edge Flaps, and Ailerons. NACA RM L51H15, 1951.

4. Riebe, John M.: A Correlation of Two-Dimensional Data on Lift Coefficient Available With Blowing-, Suction-, Slotted-, and Plain-Flap High-Lift Devices. NACA RM L55D29a, 1955.

TABLE I

INDEX OF TEST CONDITIONS AND CONFIGURATIONS

C_μ	C_Q	V_j/V_o	δ_f, deg	Flap span, b/2	Slat span, b/2	δ_s, deg	Fence location, b/2	R	Data presented	Figure
0	0	0	0	0	Off	0	Off	3.0×10^6 4.1 6.3 7.5	C_L vs α C_D, C_M, $\frac{y_{cp}}{b/2}$ vs C_L	4
.370	.020	9.5	70	.54	Off 0.57 .57 .57 .57	-- 40 40 40 44	Off Off 0.30 .43 .30	3.0	C_L vs α C_D, C_M vs C_L	5
.083 .168 .168 .370	.009 .013 .013 .020	0 4.5 6.4 6.4 9.5	70	.54	.57	44	.30	3.0 6.3 3.0 4.1 3.0	C_L vs α C_D, C_M, $\frac{y_{cp}}{b/2}$ vs C_L	6
.124 .124 .247 .382	.014 .014 .019 .024	4.6 4.6 6.5 8.1	65	.84	.57	44	.30	3.0 5.2 3.6 3.0	C_L vs α C_D, C_m, $\frac{y_{cp}}{b/2}$ vs C_L	7
.083	.009	4.5	70	.54	.57	44	.30	6.3	Chordwise pressure distributions	12
.168	.013	6.4	70	.54	.57	44	.30	3.0	Chordwise pressure distributions	13
.370	.020	9.5	70	.54	.57	44	.30	3.0	Chordwise pressure distributions	14
.124	.014	4.6	65	.84	.57	44	.30	5.2	Chordwise pressure distributions	15
.247	.019	6.5	65	.84	.57	44	.30	3.6	Chordwise pressure distributions	16
.382	.024	8.1	65	.84	.57	44	.30	3.0	Chordwise pressure distributions	17

[redacted]

TABLE II

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^{\circ}$

(a) 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30b/2 fence;
$C_Q = 0$; $C_\mu = 0$; $R = 3.0 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -0.2$					$\alpha = 3.7$				
Wing											
Upper	0	0.34	0.08	0.12	-1.49	-0.88	-1.01	-0.03	-0.01	-2.60	-1.89
	.01	-.27	-.37	-1.13	-1.08	-.89	-1.12	-1.76	-1.92	-1.89	-1.61
	.02	-.25	-.29	-.84	-.82	-.73	-.80	-1.14	-1.34	-1.41	-1.21
	.05	-.18	----	-.61	-.58	-.56	-.54	----	-.87	-.93	-.83
	.10	-.18	-.19	-.52	-.44	-.43	-.40	-.51	-.62	-.70	-.62
	.20	-.18	-.22	-.46	-.38	-.32	-.40	-.51	-.51	-.54	-.43
	.30	-.22	-.26	-.46	-.38	-.32	-.40	-.51	-.49	-.53	-.31
	.45	-.29	-.26	-.38	-.29	-.27	-.40	-.51	-.44	-.40	-.30
	.60	-.35	-.26	-.37	-.27	-.22	-.40	-.51	-.38	-.32	-.22
	.75	----	----	----	----	----	----	----	----	----	----
Lower	0.02	0.07	----	-0.38	-0.33	-0.27	0.33	----	0.07	0.07	0
	.05	.04	----	-.28	-.24	-.28	.24	----	.34	.27	.25
	.10	.04	----	.02	-.16	-.26	.19	----	.34	.32	.27
	.25	.03	0.26	.32	.24	-.11	.13	0.14	.24	.19	.06
	.50	.06	.37	.26	.18	.01	.13	.28	.24	.14	-.03
	.75	.46	.50	.36	0	-.08	.45	.37	.30	.02	-.09
Flap											
Upper	0.01	-5.14	-4.38	----	----	-0.06	-4.85	-4.84	----	----	-0.08
	.02	-5.15	----	----	-0.16	-.16	-4.85	----	----	-0.19	-.16
	.05	-4.75	-1.47	----	-.16	-.12	-4.48	-1.03	----	-.19	-.14
	.10	-2.97	-1.01	----	-.16	-.12	-2.77	-.85	----	-.17	-.15
	.20	-1.61	-.68	-0.51	-.23	-.12	-1.51	-.77	-0.50	-.23	-.15
	.40	-.90	-.59	-.52	-.18	-.12	-.90	-.85	-.50	-.22	-.12
	.65	-.50	-.48	-.40	-.19	-.13	-.49	-.81	-.44	-.22	-.13
	.95	-.09	-.48	-.79	-.37	-.06	-.12	-.81	-.80	-.32	-.08
Lower	0.02	-1.66	----	0.15	-0.01	-0.06	-1.67	----	0.01	0	-0.09
	.04	-.96	-0.28	.22	-.04	-.20	-1.01	-0.51	.12	-.01	-.15
	.06	-.49	.01	.26	-.04	-.05	-.51	-.21	.14	-.01	-.02
	.10	.09	.40	.26	-.06	0	.06	.18	.18	-.01	-.03
	.20	.73	.76	.30	----	-.06	.71	.46	.21	----	-.03
	.50	.62	.63	.37	-.14	-.05	.61	.36	.31	-.13	-.03
	.75	.48	.57	.33	-.09	-.05	.49	.24	.22	-.11	-.04
Slat											
Upper	0.02			0.22					0.40		
	.11			.39					.30		
	.21			.37					.21		
	.37			.22					.02		
	.60			.01					-.24		
	.94			-.57					-1.01		
	0.02				0.27					0.39	
	.10				.39					.32	
	.25				.29					.15	
	.45				----					----	
	.65				-.05					-.33	
	.94				-.67					-1.07	
	0.02					0.29					0.39
	.12					.38					.24
	.24					.28					.12
	.41					.13					0
	.63					-.01					-.22
	.92					-.47					-.84

[redacted]

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(a) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence;
$C_Q = 0$; $C_\mu = 0$; $R = 3.0 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 7.6$					$\alpha = 11.4$				
Wing											
Upper	0	-3.26	-0.10	-0.06	-3.64	-2.24	-3.83	-0.14	-0.09	-4.35	-2.63
	.01	-2.19	-3.13	-2.84	-2.80	-2.29	-3.05	-2.23	-3.59	-3.48	-3.02
	.02	-1.53	-2.61	-1.91	-1.96	-1.68	-2.87	-2.23	-2.33	-2.45	-2.21
	.05	-.92	-----	-1.22	-1.23	-1.14	-2.20	-----	-1.47	-1.54	-1.51
	.10	-.66	-1.04	-.83	-.89	-.80	-.76	-1.81	-1.05	-1.10	-1.08
	.20	-.46	-.66	-.70	-.67	-.54	-.54	-1.11	-.74	-.77	-.77
	.30	-.46	-.61	-.60	-.54	-.45	-.55	-.85	-.64	-.59	-.67
	.45	-.46	-.61	-.54	-.40	-.36	-.56	-.73	-.51	-.42	-.69
	.60	-.46	-.47	-.43	-.29	-.32	-.48	-.55	-.38	-.31	-.61
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.42	----	0.32	0.35	0.25	0.43	----	0.35	0.36	0.21
	.05	.34	----	.43	.43	.24	.41	----	.46	.41	.19
	.10	.30	----	.43	.41	.22	.41	----	.45	.40	.18
	.25	.21	0.36	.32	.27	.03	.28	0.40	.40	.29	.03
	.50	.21	.36	.32	.27	-.06	.28	.39	.36	.20	-.04
	.75	.51	.46	.32	.03	-.10	.50	.48	.36	.06	-.13
Flap											
Upper	0.01	-4.30	-4.49	-----	-----	-0.15	-3.99	-4.24	-----	-----	-0.25
	.02	-4.33	-----	-----	-0.15	-.28	-3.94	-----	-----	-0.15	-.66
	.05	-3.88	-1.14	-----	-.15	-.20	-3.57	-1.11	-----	-.15	-.49
	.10	-2.33	-.84	-----	-.15	-.20	-2.19	-.84	-----	-.15	-.50
	.20	-1.31	-.67	-0.45	-.18	-.24	-1.22	-.65	-0.28	-.15	-.50
	.40	-.73	-.69	-.41	-.13	-.25	-.73	-.69	-.29	-.15	-.49
	.65	-.41	-.62	-.36	-.13	-.20	-.38	-.59	-.30	-.12	-.45
	.95	-.11	-.48	-.45	-.22	-.16	-.09	-.26	-.26	-.13	-.33
Lower	0.02	-1.57	-----	-0.07	0.06	-0.16	-1.52	-----	0.14	0.07	-0.29
	.04	-.91	-0.47	.17	.05	-.16	-.87	-0.47	.20	.04	-.24
	.06	-.47	-.16	.18	.05	-.01	-.44	-.15	.21	.06	-.04
	.10	.11	.23	.24	.03	-.01	.12	.26	.23	.06	-.04
	.20	.74	.59	.35	-----	-.06	.72	.63	.30	----	-.12
	.50	.62	.52	.43	-.01	-.06	.62	.54	.37	-.06	-.12
	.75	.52	.41	.41	-.01	-.06	.51	.47	.36	-.06	-.11
Slat											
Upper	0.02			0.06					-0.95		
	.11			-.11					-.72		
	.21			-.20					-.60		
	.37			-.33					-.73		
	.60			-.66					-1.02		
	.94			-1.53					-2.03		
	0.02				-0.13					-1.19	
	.10				-.18					-.84	
	.25				-.28					-.68	
	.45				-----					-----	
	.65				-.78					-1.14	
	.94				-1.66					-2.17	
	0.02					0.10					-0.84
	.12					-.12					-.73
	.24					-.21					-.66
	.41					-.34					-.68
	.63					-.59					-.88
	.92					-1.36					-1.85

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^{\circ}$

(a) 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30b/2 fence;
$C_Q = 0$; $C_\mu = 0$; $R = 3.0 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 15.3					α = 19.3				
Wing											
Upper	0	-2.54	-0.03	-0.03	-4.78	-2.93	-2.16	-0.06	-0.08	-4.15	-2.78
	.01	-2.54	-1.91	-3.84	-3.82	-3.49	-2.18	-1.03	-4.24	-3.35	-3.45
	.02	-2.54	-1.91	-2.51	-2.73	-2.55	-2.18	-1.05	-2.79	-2.49	-2.52
	.05	-2.72	-----	-1.54	-1.73	-1.77	-2.18	-----	-1.73	-1.65	-1.78
	.10	-2.20	-1.74	-1.12	-1.26	-1.26	-2.18	-1.09	-1.25	-1.26	-1.27
	.20	-.86	-1.22	-.76	-.83	-.86	-1.59	-1.09	-.85	-.82	-.89
	.30	-.68	-.83	-.63	-.68	-.68	-1.12	-.97	-.64	-.65	-.87
	.45	-.55	-.64	-.48	-.48	-.68	-.81	-.73	-.49	-.48	-.79
	.60	-.40	-.45	-.40	-.38	-.68	-.67	-.59	-.49	-.38	-.71
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.45	----	0.31	0.28	0.17	0.39	----	0.33	0.34	0.15
	.05	.56	----	.42	.36	.15	.55	----	.41	.41	.14
	.10	.52	----	.40	.35	.13	.55	----	.41	.40	.13
	.25	.43	0.43	.38	.30	.01	.46	0.40	.41	.40	.10
	.50	.42	.42	.34	.26	-.07	.40	.40	.33	.31	.05
	.75	.60	.48	.32	.02	-.11	.56	.40	.33	.12	-.03
Flap											
Upper	0.01	-3.69	-3.68	-----	-----	-0.26	-3.47	-3.40	-----	-----	-0.20
	.02	-3.55	-----	-----	-0.21	-.75	-3.39	-----	-----	-0.20	-.78
	.05	-3.20	-.93	-----	-.23	-.51	-3.00	-.74	-----	-.23	-.48
	.10	-1.83	-.62	-----	-.25	-.51	-1.80	-.54	-----	-.24	-.48
	.20	-1.05	-.45	-0.18	-.25	-.50	-1.06	-.42	-0.24	-.25	-.49
	.40	-.73	-.43	-.18	-.25	-.51	-.66	-.31	-.22	-.24	-.49
	.65	-.30	-.28	-.18	-.21	-.51	-.37	-.30	-.18	-.21	-.45
	.95	-.01	-.15	-.18	-.18	-.43	-.13	-.21	-.17	-.23	-.40
Lower	0.02	-1.37	-----	0.30	0.06	0.20	-1.44	-----	0.09	0.15	-0.18
	.04	-.78	-0.40	.21	.06	.27	-.80	-0.40	.17	.15	-.36
	.06	-.36	-.08	.26	.05	.02	-.35	-.13	.19	.15	.07
	.10	.24	.30	.23	.02	.02	.17	.26	.22	.15	.06
	.20	.84	.63	.25	----	.06	.76	.51	.29	----	-.02
	.50	.74	.57	.36	-.05	.12	.69	.47	.44	.07	-.03
	.75	.64	.51	.28	-.03	.12	.58	.41	.37	.08	-.03
Slat											
Upper	0.02			-2.54					-4.41		
	.11			-1.34					-2.07		
	.21			-1.04					-1.55		
	.37			-1.05					-1.36		
	.60			-1.26					-1.56		
	.94			-2.23					-2.51		
	0.02				-2.34					-2.64	
	.10				-2.12					-2.62	
	.25				-1.50					-2.67	
	.45				-----					-----	
	.65				-1.38					-1.92	
	.94				-2.37					-2.05	
	0.02					-2.15					-2.35
	.12					-1.31					-2.36
	.24					-1.02					-2.36
	.41					-1.02					-1.95
	.63					-1.22					-1.42
	.92					-2.15					-2.06

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(b) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.009$; $C_\mu = 0.083$; $R = 6.3 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -0.4$					$\alpha = 3.5$				
Wing											
Upper	0	0.30	0	0.36	-2.09	-1.50	-1.08	-0.08	0.10	-3.30	-2.18
	.01	-.29	-.73	-1.48	-1.54	-1.26	-1.17	-1.95	-2.46	-2.47	-1.95
	.02	-.26	-.56	-1.06	-1.16	-1.04	-.82	-1.34	-1.66	-1.78	-1.53
	.05	-.20	----	-.73	-.78	-.73	-.58	-----	-1.07	-1.12	-1.02
	.10	-.20	-.37	-.60	-.62	-.53	-.45	-.66	-.84	-.88	-.73
	.20	-.22	-.42	-.53	-.51	-.38	-.36	-.59	-.69	-.69	-.52
	.30	-.27	-.46	-.52	-.48	-.31	-.39	-.58	-.63	-.61	-.40
	.45	-.35	-.56	-.55	-.46	-.27	-.45	-.64	-.64	-.55	-.34
	.60	-.46	-.60	-.58	-.46	-.22	-.53	-.64	-.64	-.53	-.26
	.75	----	----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.12	----	-0.14	-0.14	-0.22	0.37	----	0.25	0.23	0.23
	.05	.06	----	0	.01	-.07	.28	----	.44	.41	.30
	.10	.06	----	.25	.15	.15	.22	----	.44	.38	.24
	.25	.06	0.23	.34	.27	.07	.17	0.32	.33	.26	.03
	.50	.13	.38	.31	.13	-.07	.21	.41	.31	.13	-.10
	.75	.60	.48	.31	-.43	-.11	.62	.51	.31	-.43	-.15
Flap											
Upper	0.01	-10.87	-10.67	-----	-----	-0.16	-10.83	-10.80	-----	-----	-0.19
	.02	-10.81	------	-----	-0.51	-.31	-10.74	------	-----	-0.57	-.36
	.05	-9.63	-7.00	-----	-.31	-.17	-9.52	-7.12	-----	-.36	-.22
	.10	-5.75	-4.48	-----	-.21	-.14	-5.65	-4.53	-----	-.23	-.14
	.20	-1.83	-4.01	-0.81	-.26	-.18	-1.77	-3.82	-0.85	-.30	-.21
	.40	-.91	-2.88	-.83	-.21	-.16	-.87	-2.62	-.86	-.23	-.18
	.65	-.59	-.54	-.82	-.20	-.13	-.57	-.46	-.85	-.22	-.14
	.95	-.23	.18	.36	.03	-.10	-.21	.16	.25	-.03	-.11
Lower	0.02	0.12	0.18	0.14	-0.52	-0.19	0.15	0.23	0.18	-0.54	-0.25
	.04	.31	.08	.25	-.58	-.17	.34	.05	.26	-.59	-.21
	.06	.42	.25	.17	-.28	-.11	.43	.25	.16	-.31	-.10
	.10	.61	.43	.24	-.34	-.04	.63	.47	.23	-.35	-.07
	.20	.84	.61	.22	-----	-.10	.86	.68	.21	-----	-.11
	.50	.72	.55	.25	-.27	-.07	.75	.58	.22	-.27	-.09
	.75	.62	.49	.30	-.17	-.07	.65	.55	.31	-.18	-.09
Slat											
Upper	0.02			0.29					0.37		
	.11			.40					.18		
	.21			.31					.06		
	.37			.16					-.11		
	.60			-.11					-.42		
	.94			-.79					-1.29		
	0.02				0.38					0.31	
	.10				.37					.15	
	.25				.24					-.01	
	.45				----					-----	
	.65				-.20					-.54	
	.94				-.86					-1.42	
	0.02					0.31					0.33
	.12					.35					.12
	.24					.25					.02
	.41					.11					-.12
	.63					-.11					-.39
	.92					-.66					-1.10

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(b) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.009$;
$C_\mu = 0.083$; $R = 6.3 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 7.3					α = 11.1				
Wing											
Upper	0	-4.42	-0.29	-0.12	-4.50	-2.64	-8.85	-0.15	-0.14	-5.47	-3.11
	.01	-2.35	-3.72	-3.54	-3.45	-2.87	-3.17	-2.13	-4.34	-4.29	-3.72
	.02	-1.63	-2.72	-2.34	-2.48	-2.17	-2.32	-2.10	-2.90	-3.14	-2.78
	.05	-1.01	-----	-1.49	-1.56	-1.51	-2.21	-----	-1.83	-1.96	-1.96
	.10	-.74	-1.07	-1.15	-1.20	-1.07	-1.18	-1.89	-1.40	-1.50	-1.43
	.20	-.58	-.79	-.89	-.91	-.79	-.82	-1.30	-1.05	-1.14	-1.04
	.30	-.54	-.72	-.80	-.73	-.62	-.71	-1.03	-.94	-.93	-.80
	.45	-.54	-.75	-.76	-.65	-.54	-.62	-.93	-.88	-.80	-.71
	.60	-.58	-.75	-.73	-.61	-.47	-.63	-.88	-.85	-.72	-.66
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.43	----	0.37	0.33	0.23	0.37	----	0.38	0.33	0.15
	.05	.43	----	.47	.42	.23	.51	----	.45	.40	.17
	.10	.37	----	.46	.40	.19	.48	----	.46	.41	.15
	.25	.29	0.40	.39	.29	.01	.38	0.45	.41	.33	0
	.50	.29	.46	.34	.16	-.12	.34	.49	.36	.19	-.12
	.75	.66	.53	.34	-.43	-.19	.68	.54	.33	-.38	-.19
Flap											
Upper	0.01	-11.00	-10.90	-----	----	-0.27	-10.83	-10.53	-----	-----	-0.36
	.02	-10.87	------	-----	-0.68	-.70	-10.63	------	-----	-0.73	-1.01
	.05	-9.62	-7.53	-----	-.38	-.46	-9.32	-8.26	-----	-.43	-.71
	.10	-5.68	-4.59	-----	-.32	-.49	-5.48	-4.42	-----	-.39	-.73
	.20	-1.73	-4.11	-0.71	-.35	-.48	-1.62	-1.71	-1.09	-.40	-.70
	.40	-.84	-2.12	-.64	-.29	-.47	-.82	-.63	-.92	-.33	-.68
	.65	-.57	-.12	-.67	-.24	-.42	-.58	-.38	-.44	-.26	-.61
	.95	-.19	.17	.21	-.15	-.34	-.17	-.12	.19	-.06	-.47
Lower	0.02	0.15	0.21	0.19	-0.57	-0.32	0.16	0.24	0.19	-0.50	-0.34
	.04	.34	0	.28	-.62	-.29	.35	0	.27	-.55	-.33
	.06	.44	.20	.21	-.31	-.06	.45	.20	.21	-.18	-.07
	.10	.66	.43	.26	-.38	-.10	.65	.41	.26	-.28	-.10
	.20	.86	.64	.23	-----	-.15	.84	.60	.26	-----	-.16
	.50	.76	.57	.21	-.28	-.15	.74	.53	.23	-.15	-.15
	.75	.68	.53	.22	-.20	-.16	.67	.49	.30	-.09	-.17
Slat											
Upper	0.02			-0.25					-1.50		
	.11			-.31					-.95		
	.21			-.37					-.85		
	.37			-.52					-.93		
	.60			-.91					-1.28		
	.94			-1.99					-2.47		
	0.02				-0.67					-2.27	
	.10				-.48					-1.25	
	.25				-.50					-1.03	
	.45				-----					-----	
	.65				-1.04					-1.49	
	.94				-2.13					-2.72	
	0.02					-0.36					-1.88
	.12					-.42					-1.22
	.24					-.40					-.96
	.41					-.53					-1.00
	.63					-.81					-1.29
	.92					-1.71					-2.35

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^{\circ}$

(b) 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30b/2 fence; $C_Q = 0.009$; $C_\mu = 0.083$; $R = 6.3 \times 10^{6}$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 15.0$					$\alpha = 19.0$				
Wing											
Upper	0	-4.87	-0.31	-0.16	-6.55	-3.84	-2.52	-0.15	-0.09	-6.78	-4.29
	.01	-4.10	-2.39	-5.00	-5.19	-4.64	-2.47	-1.41	-5.52	-5.47	-5.23
	.02	-3.85	-2.11	-3.35	-3.82	-3.44	-2.49	-1.41	-3.72	-4.01	-3.84
	.05	-3.47	-----	-2.10	-2.37	-2.43	-2.49	-----	-2.31	-2.47	-2.74
	.10	-2.21	-1.88	-1.56	-1.75	-1.79	-2.46	-1.46	-1.73	-1.82	-2.02
	.20	-1.11	-1.34	-1.13	-1.30	-1.30	-1.92	-1.35	-1.20	-1.29	-1.49
	.30	-.80	-1.04	-.98	-1.06	-1.06	-1.34	-1.16	-1.00	-1.02	-1.31
	.45	-.67	-.92	-.87	-.89	-.99	-1.02	-.93	-.83	-.81	-1.31
	.60	-.62	-.75	-.84	-.78	-1.05	-.84	-.74	-.74	-.67	-1.31
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.33	----	0.34	0.31	0.09	0.33	----	0.32	0.28	0
	.05	.53	----	.44	.41	.11	.58	----	.44	.43	.04
	.10	.52	----	.48	.44	.11	.60	----	.49	.45	.05
	.25	.43	0.49	.45	.38	.02	.52	0.53	.46	.40	0
	.50	.38	.49	.40	.24	-.08	.44	.53	.42	.29	-.07
	.75	.67	.55	.39	-.22	-.19	.73	.57	.42	-.05	-.17
Flap											
Upper	0.01	-10.52	-10.56	-----	-----	-0.43	-10.27	-9.96	-----	-----	-0.36
	.02	-10.30	-----	-----	-0.74	-1.42	-10.04	-----	-----	-0.61	-1.45
	.05	-9.03	-6.46	-----	-.51	-1.04	-8.82	-5.67	-----	-.50	-1.08
	.10	-5.27	-3.46	-----	-.41	-1.04	-5.17	-3.03	-----	-.40	-1.10
	.20	-1.50	-1.21	-1.06	-.46	-1.00	-1.49	-1.05	-0.92	-.40	-.99
	.40	-.78	-.56	-.29	-.39	-.92	-.83	-.53	-.27	-.37	-.90
	.65	-.59	-.37	-.43	-.33	-.79	-.63	-.31	-.40	-.33	-.81
	.95	-.18	.08	.12	-.14	-.61	-.13	.10	.10	-.26	-.71
Lower	0.02	0.21	0.30	0.23	-0.25	-0.35	0.24	0.33	0.25	-0.14	-0.32
	.04	.38	.13	.29	-.30	-.37	.40	.20	.34	-.16	-.40
	.06	.48	.29	.24	.01	-.09	.51	.35	.27	-.10	-.10
	.10	.67	.48	.30	-.11	-.09	.69	.52	.33	-.08	-.09
	.20	.84	.62	.29	-----	-.15	.86	.64	.31	-----	-.13
	.50	.75	.54	.30	-.09	-.15	.76	.57	.32	-.07	-.15
	.75	.68	.51	.34	-.11	-.19	.68	.53	.36	-.10	-.21
Slat											
Upper	0.02			-3.12					-4.97		
	.11			-1.82					-2.61		
	.21			-1.45					-2.00		
	.37			-1.42					-1.85		
	.60			-1.74					-2.12		
	.94			-2.99					-3.39		
	0.02				-4.88					-7.16	
	.10				-2.42					-3.54	
	.25				-1.76					-2.48	
	.45				-----					-----	
	.65				-2.03					-2.42	
	.94				-3.36					-3.72	
	0.02					-3.67					-5.95
	.12					-2.19					-3.21
	.24					-1.61					-2.28
	.41					-1.53					-2.04
	.63					-1.80					-2.25
	.92					-3.04					-3.60

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(c) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.013$;
$C_\mu = 0.168$; $R = 3.0 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -0.6$					$\alpha = 3.2$				
						Wing					
Upper	0	-0.19	-0.02	0.25	-2.42	-1.89	-1.50	-0.06	0.15	-3.95	-2.35
	.01	-.41	-1.12	-1.98	-1.83	-1.61	-1.20	-2.52	-2.99	-3.08	-2.36
	.02	-.41	-.75	-1.33	-1.33	-1.23	-.82	-1.74	-2.02	-2.22	-1.73
	.05	-.49	-----	-.89	-.89	-.86	-.53	-----	-1.31	-1.44	-1.15
	.10	-.22	-.41	-.68	-.69	-.61	-.38	-.83	-1.02	-1.11	-.84
	.20	-.23	-.41	-.68	-.59	-.45	-.38	-.71	-.86	-.93	-.60
	.30	-.32	-.53	-.69	-.59	-.33	-.39	-.72	-.86	-.86	-.45
	.45	-.35	-.61	-.72	-.59	-.32	-.41	-.81	-.93	-.79	-.38
	.60	-.45	-.74	-.91	-.59	-.24	-.51	-.81	-1.02	-.79	-.28
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.25	----	-0.07	-0.03	-0.21	0.53	----	0.31	0.29	0.26
	.05	.25	----	.21	.14	.01	.43	----	.46	.39	.26
	.10	.15	----	.43	.36	.27	.35	----	.46	.36	.25
	.25	.15	0.33	.42	.29	.06	.34	0.42	.36	.24	.04
	.50	.23	.49	.42	.14	-.09	.34	.51	.36	.10	-.09
	.75	.65	.49	.37	-.59	-.09	.75	.54	.28	.70	-.12
						Flap					
Upper	0.01	-16.78	-16.25	-----	-----	-0.24	-16.16	-17.36	-----	-----	-0.24
	.02	-16.42	------	-----	-0.28	-.20	-15.84	------	-----	-0.48	-.24
	.05	-14.29	-17.00	-----	-.32	-.14	-13.64	-17.99	-----	-.55	-.24
	.10	-8.22	-9.12	-----	-.21	-.14	-7.79	-9.69	-----	-.45	-.15
	.20	-2.19	-3.31	-2.22	-.41	-.14	-1.99	-3.47	-2.22	-.62	-.15
	.40	-1.02	-.96	-2.31	-.34	-.10	-.84	-1.02	-2.22	-.55	-.16
	.65	-.58	-.33	-1.34	-.30	-.10	-.46	-.37	-1.43	-.50	-.13
	.95	-.31	.12	.23	-.02	-.04	-.09	.06	.16	-.15	-.13
Lower	0.02	0.15	0.20	0.08	-0.66	-0.24	0.35	0.30	0.02	-0.83	-0.22
	.04	.29	-.25	.32	-.56	-.11	.46	-.26	.18	-.72	-.14
	.06	.43	.02	.23	-.58	-.13	.55	.03	.17	-.74	-.04
	.10	.71	.37	.37	-.40	0	.84	.42	.30	-.56	.01
	.20	.93	.76	.36	-----	-.08	1.09	.78	.30	-----	-.03
	.50	.84	.69	.36	-.29	-.02	.98	.71	.27	-.45	-.02
	.75	.77	.63	.46	-.12	-.01	.86	.71	.41	-.27	-.01
						Slat					
Upper	0.02			0.52					0.32		
	.11			.44					.10		
	.21			.31					-.01		
	.37			.11					-.16		
	.60			-.05					-.51		
	.94			-.89					-1.49		
	0.02				0.46					0.14	
	.10				.41					.01	
	.25				.24					-.12	
	.45				-----					-----	
	.65				-.24					-.67	
	.94				-1.02					-1.65	
	0.02					0.42					0.21
	.12					.30					0
	.24					.17					-.10
	.41					.06					-.20
	.63					-.12					-.47
	.92					-.78					-1.26

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(c) 0.57b/2 slat; $\delta_s = 40^\circ$; 0.30b/2 fence; $C_Q = 0.013$;
$C_\mu = 0.168$; $R = 3.0 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 7.1$					$\alpha = 10.9$				
Wing											
Upper	0	-3.65	-0.03	0.10	-5.04	-2.77	-3.03	-0.03	0.03	-5.88	-3.25
	.01	-2.90	-2.92	-4.00	-3.99	-3.24	-2.86	-2.39	-4.92	-4.62	-4.03
	.02	-2.68	-2.72	-2.69	-2.90	-2.34	-2.97	-2.39	-3.22	-3.41	-2.95
	.05	-1.67	-----	-1.72	-1.88	-1.63	-3.22	-----	-2.09	-2.20	-2.11
	.10	-.66	-1.70	-1.33	-1.40	-1.19	-1.64	-2.12	-1.54	-1.68	-1.53
	.20	-.52	-.93	-1.06	-1.12	-.87	-.56	-1.44	-1.15	-1.29	-1.12
	.30	-.58	-.86	-1.04	-.98	-.76	-.63	-1.15	-1.11	-1.12	-.91
	.45	-.58	-.87	-1.02	-.84	-.69	-.64	-1.05	-1.13	-1.00	-.82
	.60	-.60	-.89	-1.09	-.86	-.69	-.64	-.92	-1.27	-1.01	-.87
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.55	----	0.33	0.35	0.16	0.45	----	0.44	0.33	0.11
	.05	.55	----	.42	.38	.16	.56	----	.51	.41	.10
	.10	.45	----	.41	.38	.11	.50	----	.51	.39	.08
	.25	.37	0.40	.38	.29	-.05	.43	0.41	.51	.34	-.06
	.50	.36	.50	.35	.13	-.16	.43	.48	.40	.18	-.18
	.75	.74	.55	.32	-.68	-.23	.70	.51	.39	-.66	-.27
Flap											
Upper	0.01	-16.79	-17.69	-----	-----	-0.42	-17.12	-17.32	-----	-----	-0.56
	.02	-16.38	------	-----	-0.56	-.68	-16.65	------	-----	-0.66	-1.02
	.05	-14.16	-16.00	-----	-.53	-.68	-14.41	-13.63	-----	-.60	-.89
	.10	-8.05	-8.56	-----	-.45	-.67	-8.17	-7.34	-----	-.48	-.93
	.20	-2.11	-2.90	-2.13	-.45	-.67	-2.03	-2.33	-3.22	-.53	-.93
	.40	-.93	-.91	-2.19	-.43	-.64	-.94	-.84	-.90	-.46	-.93
	.65	-.57	-.38	-1.28	-.36	-.63	-.62	-.43	-.81	-.39	-.83
	.95	-.24	.08	.20	-.18	-.47	-.30	.05	.14	-.26	-.62
Lower	0.02	0.20	0.25	-0.01	-0.88	-0.43	0.22	0.26	0.07	-0.70	-0.45
	.04	.36	-.24	.20	-.74	-.30	.38	-.12	.32	-.74	-.38
	.06	.49	.05	.15	-.74	-.11	.48	.07	.21	-.38	-.10
	.10	.76	.44	.27	-.62	-.12	.73	.39	.40	-.54	-.12
	.20	1.02	.81	.27	-----	-.13	.96	.73	.39	-----	-.15
	.50	.93	.72	.25	-.45	-.13	.88	.65	.25	-.46	-.17
	.75	.86	.72	.37	-.34	-.20	.82	.65	.35	-.35	-.22
Slat											
Upper	0.02			-0.71					-1.97		
	.11			-.51					-1.11		
	.21			-.53					-.89		
	.37			-.67					-.96		
	.60			-1.03					-1.30		
	.94			-2.27					-2.50		
	0.02				-1.27					-2.63	
	.10				-.83					-1.75	
	.25				-.71					-1.08	
	.45				-----					-----	
	.65				-1.24					-1.52	
	.94				-2.44					-2.75	
	0.02					-0.68					-2.08
	.12					-.64					-1.28
	.24					-.55					-.97
	.41					-.65					-1.01
	.63					-.95					-1.27
	.92					-1.97					-2.36

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(c) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.013$;
$C_\mu = 0.168$; $R = 3.0 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 14.9$					$\alpha = 18.8$				
Wing											
Upper	0	-2.47	-0.13	-0.02	-6.03	-3.74	-2.48	-0.07	-0.02	-5.39	-3.48
	.01	-2.53	-2.43	-5.18	-4.75	-4.62	-2.57	-1.71	-5.79	-4.45	-4.27
	.02	-2.56	-2.47	-3.40	-3.64	-3.46	-2.62	-1.71	-3.79	-3.52	-3.25
	.05	-2.73	----	-2.13	-2.50	-2.52	-2.69	----	-2.41	-2.44	-2.48
	.10	-2.57	-2.23	-1.59	-1.93	-1.93	-2.61	-1.68	-1.82	-1.96	-1.98
	.20	-1.44	-1.68	-1.18	-1.44	-1.44	-2.04	-1.54	-1.29	-1.49	-1.68
	.30	-.88	-1.32	-1.07	-1.25	-1.28	-1.46	-1.35	-1.11	-1.26	-1.63
	.45	-.67	-1.13	-.98	-1.10	-1.28	-1.01	-1.10	-.96	-1.05	-1.67
	.60	-.58	-.86	-1.01	-1.04	-1.45	-.78	-.86	-.96	-.89	-1.78
	.75	----	----	----	----	----	----	----	----	----	----
Lower	0.02	0.41	----	0.41	0.32	-0.01	0.38	----	0.36	0.35	-0.07
	.05	.57	----	.53	.40	-.02	.67	----	.50	.42	-.08
	.10	.56	----	.52	.40	.01	.64	----	.49	.42	-.06
	.25	.49	0.48	.51	.39	-.05	.58	0.60	.49	.41	-.07
	.50	.47	.54	.47	.27	-.15	.52	.60	.44	.26	-.15
	.75	.71	.53	.42	-.30	-.26	.81	.60	.43	-.16	-.26
Flap											
Upper	0.01	-15.80	-16.92	----	----	-0.66	-15.88	-16.61	----	----	-0.68
	.02	-15.37	----	----	-0.63	-1.65	-15.38	----	----	-0.66	-1.69
	.05	-13.25	-11.90	----	-.61	-1.37	-13.25	-10.51	----	-.66	-1.48
	.10	-7.50	-6.33	----	-.55	-1.40	-7.50	-5.53	----	-.63	-1.38
	.20	-1.78	-1.83	-1.54	-.56	-1.33	-1.98	-1.66	-1.30	-.63	-1.27
	.40	-.83	-.78	-.28	-.51	-1.27	-1.01	-.69	-.31	-.59	-1.28
	.65	-.59	-.44	-.52	-.46	-1.09	-.76	-.36	-.49	-.55	-1.28
	.95	-.27	-.01	.16	-.19	-.87	-.25	.05	.16	-.27	-1.04
Lower	0.02	0.23	0.33	0.06	-0.40	-0.49	0.18	0.34	0.05	-0.29	-0.47
	.04	.43	.06	.31	-.31	-.44	.36	.13	.27	-.20	-.59
	.06	.47	.26	.30	-.11	-.13	.45	.34	.27	-.20	-.16
	.10	.73	.54	.38	-.21	-.14	.71	.60	.39	-.22	-.15
	.20	.92	.80	.37	----	-.14	.93	.81	.38	----	-.18
	.50	.86	.73	.37	-.15	-.22	.89	.75	.38	-.10	-.18
	.75	.77	.70	.46	-.14	-.28	.81	.72	.50	-.14	-.28
Slat											
Upper	0.02			-5.05					-5.45		
	.11			-2.21					-5.18		
	.21			-1.75					-2.89		
	.37			-1.67					-1.64		
	.60			-1.96					-2.00		
	.94			-3.32					-3.35		
	0.02				-3.07					-3.66	
	.10				-3.07					-3.66	
	.25				-3.24					-3.66	
	.45				----					----	
	.65				-2.21					-3.08	
	.94				-2.95					-2.75	
	0.02					-3.05					-3.46
	.12					-3.02					-3.35
	.24					-2.90					-3.35
	.41					-2.13					-3.35
	.63					-1.86					-2.69
	.92					-3.02					-2.71

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(d) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.013$; $C_\mu = 0.168$; $R = 4.1 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -0.6$					$\alpha = 3.2$				
Wing											
Upper	0	-0.08	-0.01	0.29	-2.53	-1.84	-1.36	-0.02	0.17	-3.90	-2.33
	.01	-.61	-.95	-1.77	-1.91	-1.56	-1.27	-2.42	-2.90	-2.97	-2.29
	.02	-.46	-.74	-1.25	-1.42	-1.25	-.89	-1.68	-1.95	-2.13	-1.73
	.05	-.34	-----	-.86	-.96	-.86	-.61	-----	-1.30	-1.37	-1.19
	.10	-.32	-.44	-.68	-.77	-.62	-.47	-.77	-1.02	-1.07	-.85
	.20	-.27	-.49	-.63	-.64	-.46	-.38	-.67	-.85	-.87	-.62
	.30	-.34	-.54	-.64	-.63	-.37	-.43	-.67	-.85	-.80	-.49
	.45	-.48	-.58	-.74	-.62	-.33	-.52	-.77	-.88	-.73	-.40
	.60	-.53	-1.26	-.88	-.65	-.29	-.59	-.90	-1.00	-.76	-.32
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.21	----	-0.05	-0.07	-0.13	0.39	----	0.31	0.29	1.22
	.05	.15	----	.12	.11	.11	.30	----	.45	.40	.23
	.10	.12	----	.35	.29	.22	.25	----	.43	.39	.19
	.25	.11	0.27	.35	.26	.02	.19	0.33	.35	.27	0
	.50	.19	.43	.32	.11	-.13	.24	.43	.33	.11	-.15
	.75	.63	.51	.33	-.69	-.17	.62	.51	.31	-.71	-.20
Flap											
Upper	0.01	-18.02	-17.74	-----	-----	-0.18	-18.42	-17.92	-----	-----	-0.24
	.02	-17.55	------	-----	-0.56	-.42	-17.91	------	-----	-0.65	-.47
	.05	-15.30	-19.36	-----	-.45	-.23	-15.56	-18.92	-----	-.54	-.29
	.10	-8.69	-10.36	-----	-.28	-.16	-8.78	-10.10	-----	-.37	-.19
	.20	-2.22	-3.88	-2.12	-.37	-.24	-2.24	-3.73	-2.37	-.45	-.28
	.40	-1.08	-1.26	-2.72	-.31	-.21	-1.07	-1.11	-2.49	-.39	-.27
	.65	-.66	-.60	-1.58	-.27	-.18	-.64	-.45	-1.58	-.33	-.24
	.95	-.47	-.06	.03	-.12	-.12	-.45	.02	.14	-.17	-.19
Lower	0.02	0.12	-1.10	-0.08	-0.84	-0.35	0.11	0.09	-0.13	-0.88	-0.39
	.04	.26	-.45	.23	-.77	-.23	.28	-.42	.09	-.81	-.28
	.06	.38	-.16	.18	-.79	-.16	.39	-.12	.06	-.83	-.19
	.10	.63	.16	.26	-.60	-.09	.64	.26	.20	-.61	-.13
	.20	.90	.53	.28	-----	-.12	.90	.61	.24	-----	-.14
	.50	.80	.45	.19	-.50	-.13	.81	.56	.13	-.50	-.15
	.75	.73	.33	.06	-.32	-.12	.73	.52	.25	-.34	-.14
Slat											
Upper	0.02			0.35					0.31		
	.11			.33					.11		
	.21			.24					-.01		
	.37			.09					-.18		
	.60			-.19					-.53		
	.94			-.93					-1.48		
	0.02				0.38					0.12	
	.10				.30					.02	
	.25				.17					-.12	
	.45				-----					-----	
	.65				-.33					-.69	
	.94				-1.08					-1.67	
	0.02					0.33					0.20
	.12					.25					-.02
	.24					.17					-.09
	.41					.02					-.24
	.63					-.18					-.51
	.92					-.78					-1.30

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(d) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.013$;
$C_\mu = 0.166$; $R = 4.1 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 7.1					α = 10.9				
Wing											
Upper	0	-4.65	-0.16	0.12	-4.96	-2.85	-7.97	-0.15	0.17	-6.05	-3.58
	.01	-2.44	-3.42	-3.88	-3.91	-3.19	-3.39	-2.39	-4.77	-4.72	-4.13
	.02	-1.71	-3.04	-2.59	-2.82	-2.33	-2.70	-2.35	-3.20	-3.48	-3.06
	.05	-1.08	-----	-1.66	-1.83	-1.65	-2.48	-----	-2.07	-2.23	-2.15
	.10	-.78	-1.58	-1.31	-1.40	-1.21	-1.12	-2.14	-1.58	-1.73	-1.59
	.20	-.61	-.90	-1.03	-1.10	-.88	-.82	-1.45	-1.23	-1.34	-1.17
	.30	-.60	-.84	-.96	-.95	-.75	-.77	-1.18	-1.15	-1.17	-.91
	.45	-.66	-.92	-1.00	-.87	-.72	-.74	-1.09	-1.15	-1.07	-.81
	.60	-.69	-.93	-1.07	-.86	-.67	-.74	-1.04	-1.33	-1.03	-.84
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.41	----	0.35	0.31	0.20	0.34	----	0.35	0.29	0.12
	.05	.41	----	.44	.39	.18	.51	----	.45	.36	.11
	.10	.37	----	.44	.39	.14	.49	----	.44	.41	.11
	.25	.31	0.41	.40	.32	-.02	.39	0.44	.44	.34	-.03
	.50	.31	.48	.35	.11	-.16	.34	.49	.40	.13	-.15
	.75	.68	.54	.31	-.71	-.23	.69	.53	.33	-.76	-.25
Flap											
Upper	0.01	-18.60	-19.20	-----	-----	-0.40	-18.38	-18.28	-----	-----	-0.48
	.02	-16.05	------	-----	-0.66	-.96	-17.74	------	-----	-0.84	-1.35
	.05	-15.66	-18.11	-----	-.58	-.64	-15.34	-15.16	-----	-.71	-1.00
	.10	-8.82	-9.71	-----	-.40	-.69	-8.64	-8.03	-----	-.53	-1.00
	.20	-2.20	-3.36	-2.31	-.48	-.67	-2.13	-2.70	-3.60	-.60	-.98
	.40	-1.07	-1.07	-2.47	-.40	-.67	-1.10	-.96	-1.09	-.50	-.95
	.65	-.64	-.51	-1.47	-.35	-.61	-.71	-.52	-.97	-.44	-.87
	.95	-.44	.01	.14	-.17	-.47	-.49	.04	.21	-.23	-.68
Lower	0.02	0.19	0.25	-0.14	-0.84	-0.43	0.14	0.22	-0.11	-0.78	-0.48
	.04	.33	-.35	.12	-.76	-.33	.30	-.28	.16	-.88	-.43
	.06	.42	-.03	.09	-.78	-.11	.39	-.01	.11	-.42	-.10
	.10	.67	.33	.22	-.58	-.12	.61	.31	.25	-.62	-.13
	.20	.91	.67	.25	-----	-.17	.86	.62	.28	-----	-.18
	.50	.83	.62	.14	-.16	-.16	.79	.56	.15	-.58	-.18
	.75	.75	.59	.28	-.32	-.19	.73	.53	.26	-.43	-.23
Slat											
Upper	0.02			-0.60					-2.23		
	.11			-.48					-1.21		
	.21			-.49					-1.01		
	.37			-.62					-1.07		
	.60			-.96					-1.41		
	.94			-2.11					-2.70		
	0.02				-1.09					-3.34	
	.10				-.69					-1.60	
	.25				-.65					-1.26	
	.45				-----					-----	
	.65				-1.16					-1.69	
	.94				-2.32					-3.01	
	0.02					-0.73					-2.56
	.12					-.64					-1.51
	.24					-.56					-1.16
	.41					-.65					-1.15
	.63					-.92					-1.45
	.92					-1.89					-2.62

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(d) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.013$;
$C_\mu = 0.168$; $R = 4.1 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 14.8					α = 18.7				
Wing											
Upper	0	-3.50	-0.32	-0.09	-6.44	-4.05	-2.78	-0.26	-0.06	-5.49	-3.62
	.01	-3.50	-2.32	-5.46	-5.06	-4.77	-2.87	-1.66	-6.10	-4.57	-4.36
	.02	-3.50	-2.37	-3.67	-3.79	-3.56	-2.95	-1.73	-4.11	-3.59	-3.38
	.05	-3.59	-----	-2.30	-2.48	-2.59	-2.98	-----	-2.59	-2.53	-2.61
	.10	-2.69	-2.14	-1.75	-1.91	-1.95	-2.92	-1.69	-1.94	-2.10	-2.12
	.20	-1.13	-1.57	-1.29	-1.46	-1.48	-2.09	-1.54	-1.40	-1.57	-1.72
	.30	-.88	-1.24	-1.17	-1.24	-1.28	-1.33	-1.33	-1.21	-1.35	-1.66
	.45	-.81	-1.08	-1.09	-1.08	-1.28	-.98	-1.07	-1.07	-1.15	-1.74
	.60	-.73	-.85	-1.17	-1.00	-1.41	-.82	-.87	-1.06	-.99	-1.84
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.33	----	0.35	0.31	0.01	0.30	----	0.32	0.30	-0.06
	.05	.54	----	.47	.41	.03	.58	----	.45	.44	-.02
	.10	.53	----	.16	.42	.03	.61	----	.50	.44	-.03
	.25	.48	0.50	.46	.37	-.03	.54	0.55	.50	.41	-.04
	.50	.44	.53	.42	.21	-.13	.47	.57	.45	.27	-.13
	.75	.73	.56	.38	-.41	-.22	.74	.59	.41	.24	-.19
Flap											
Upper	0.01	-18.34	-18.13	-----	-----	-0.52	-27.92	-18.21	-----	-----	-0.54
	.02	-17.64	------	-----	-0.77	-1.84	-17.21	------	-----	-0.78	-1.97
	.05	-15.22	-12.97	-----	-.69	-1.38	-14.82	-12.18	-----	-.69	-1.50
	.10	-8.49	-6.78	-----	-.54	-1.39	-8.28	-6.31	-----	-.60	-1.55
	.20	-2.00	-1.94	-2.19	-.59	-1.30	-2.95	-1.76	-1.68	-.60	-1.34
	.40	-1.03	-.78	-.48	-.50	-1.19	-1.06	-.73	-.32	-.55	-1.22
	.65	-.68	-.46	-.66	-.44	-1.04	-.75	-.43	-.60	-.51	-1.13
	.95	-.47	.01	.08	-.22	-.79	-.46	.01	.07	-.35	-.99
Lower	0.02	0.22	0.34	-0.09	-0.53	-0.48	0.21	0.38	-0.05	-0.42	-0.43
	.04	.38	0	.18	-.46	-.42	.37	.06	.21	-.37	-.51
	.06	.46	.22	.17	-.40	-.12	.45	.25	.21	-.39	-.14
	.10	.69	.49	.28	-.31	-.13	.69	.52	.28	-.25	-.11
	.20	.92	.74	.32	-----	-.17	.89	.76	.32	-----	-.16
	.50	.84	.68	.25	-.29	-.17	.82	.71	.29	-.17	-.18
	.75	.78	.57	.34	-.25	-.23	.76	.69	.39	-.21	-.24
Slat											
Upper	0.02			-5.01					-6.95		
	.11			-2.25					-3.11		
	.21			-1.75					-2.36		
	.37			-1.65					-2.10		
	.60			-1.96					-2.33		
	.94			-3.34					-3.63		
	0.02				-3.78					-3.74	
	.10				-3.68					-3.66	
	.25				-3.31					-3.61	
	.45				-----					-----	
	.65				-2.07					-3.03	
	.94				-3.07					-2.85	
	0.02					-3.30					-3.59
	.12					-3.20					-3.53
	.24					-2.76					-3.53
	.41					-1.94					-3.49
	.63					-1.87					-2.79
	.92					-3.07					-2.81

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^{\circ}$

(e) 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30b/2 fence; $C_Q = 0.020$; $C_\mu = 0.370$; $R = 3.0 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -1.0$					$\alpha = 2.8$				
Wing											
Upper	0	-0.40	0.09	0.97	-3.66	-2.27	-2.77	-0.09	-0.87	-4.73	-2.69
	.01	-.81	-1.65	-2.37	-2.74	-2.07	-1.92	-3.29	-3.58	-3.68	-2.82
	.02	-.66	-1.04	-1.64	-2.01	-1.61	-1.41	-2.35	-2.41	-2.69	-2.12
	.05	-.42	-----	-1.10	-1.34	-1.12	-.93	-----	-1.60	-1.75	-1.51
	.10	-.33	-.59	-.93	-1.10	-.84	-.74	-1.15	-1.26	-1.39	-.99
	.20	-.31	-.59	-.81	-.96	-.64	-.52	-.96	-1.08	-1.10	-.82
	.30	-.41	-.67	-.86	-.97	-.55	-.65	-.96	-1.08	-1.11	-.64
	.45	-.53	-.78	-1.01	-.97	-.48	-.80	-1.13	-1.21	-1.11	-.55
	.60	-.66	-.79	-1.33	-1.02	-.46	-.90	-1.23	-1.50	-1.11	-.44
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.26	----	-0.01	0.05	0.07	0.29	1.00	0.34	0.27	0.18
	.05	.16	----	.30	.25	.12	.20	-.20	.47	.37	.17
	.10	.13	----	.40	.25	.06	.13	.96	.46	.35	.16
	.25	.08	0.28	.30	.11	-.15	.13	.25	.37	.24	-.08
	.50	.08	.39	.30	-.10	-.35	.12	.36	.37	.01	-.24
	.75	.56	.46	.21	-1.23	-.32	.53	.37	.21	-1.18	-.34
Flap											
Upper	0.01	-31.02	-29.01	-----	-----	-0.50	-33.52	-33.59	-----	-----	-0.54
	.02	-29.93	------	-----	-1.21	-1.03	-32.26	------	-----	-1.15	-1.02
	.05	-25.74	-29.91	-----	-.94	-.34	-27.68	-34.75	-----	-.92	-.18
	.10	-14.40	-15.84	-----	-.53	-.32	-15.44	-18.49	-----	-.51	-.21
	.20	-3.28	-5.16	-5.57	-.71	-.50	-3.59	-6.16	-5.56	-.67	-.46
	.40	-1.63	-1.53	-1.71	-.61	-.43	-1.84	-1.88	-1.44	-.58	-.39
	.65	-.84	-.68	-1.48	-.56	-.40	-.98	-.88	-1.29	-.51	-.39
	.95	-.96	-.11	.34	-.29	-.34	-1.12	-.27	-----	.18	-.31
Lower	0.02	-0.33	-----	-0.11	-1.24	-0.72	-0.48	-----	0.11	-1.27	-0.65
	.04	-.08	-0.96	.03	-1.07	-.50	-.24	-1.32	.25	-1.20	-.43
	.06	.01	-.53	-.02	-1.19	-.43	-.12	-.82	.15	-1.18	-.25
	.10	.46	.09	.15	-1.48	-.30	.34	-.13	.34	-1.10	-.80
	.20	.88	.61	.17	-----	-.39	.77	.48	.44	-----	-.25
	.50	.76	.61	-.03	-1.00	-.35	.69	.48	.32	-.98	-.26
	.75	.72	.61	.11	-.76	-.30	.65	.43	1.61	-.65	-.25
Slat											
Upper	0.02			0.23					0.06		
	.11			0					-.12		
	.21			0					-.19		
	.37			-.18					-.37		
	.60			-.55					-.78		
	.94			-1.47					-1.85		
	0.02				0.31					-.19	
	.10				.16					-.19	
	.25				-.05					-.30	
	.45				-----					-----	
	.65				-.68					-.93	
	.94				-1.65					-2.03	
	0.02					0.34					0.03
	.12					.18					-.17
	.24					.07					-.26
	.41					-.05					-.39
	.63					-.36					-.68
	.92					-1.14					-1.54

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(c) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.020$;
$C_\mu = 0.370$; $R = 3.0 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 6.7$					$\alpha = 10.5$				
Wing											
Upper	0	-4.40	-0.13	0.29	-5.69	-3.31	-3.14	-0.05	0.59	-6.84	-3.88
	.01	-3.43	-2.68	-4.71	-4.49	-3.79	-3.14	-2.64	-5.31	-5.35	-4.54
	.02	-3.13	-2.55	-3.12	-3.31	-2.79	-3.14	-2.65	-3.53	-3.97	-3.35
	.05	-2.34	-----	-2.05	-2.14	-1.99	-3.55	-----	-2.27	-2.63	-2.36
	.10	-.88	-1.92	-1.59	-1.65	-1.46	-2.37	-2.42	-1.74	-2.01	-1.73
	.20	-.64	-1.11	-1.30	-1.31	-1.13	-.75	-1.73	-1.33	-1.60	-1.28
	.30	-.77	-.99	-1.29	-1.15	-.98	-.73	-1.43	-1.35	-1.39	-1.03
	.45	-.78	-1.11	-1.36	-1.09	-2.01	-.84	-1.32	-1.35	-1.32	-.94
	.60	-.83	-1.08	-1.65	-1.09	-1.01	-.87	1.37	-1.60	-1.30	-1.11
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.41	----	0.38	0.38	0.16	0.39	----	0.34	0.29	0.10
	.05	.46	----	.46	.44	.15	.55	----	.46	.39	.08
	.10	.41	----	.48	.43	.07	.47	----	.46	.39	.08
	.25	.32	0.44	.43	.37	-.07	.38	0.44	.45	.32	-.06
	.50	.32	.55	.40	.13	-.21	.37	.53	.38	.10	-.18
	.75	.67	.55	.27	-.96	-.30	.70	.51	.30	-1.01	-.28
Flap											
Upper	0.01	-32.03	-31.28	-----	-----	-0.69	-32.73	-32.07	-----	-----	-0.68
	.02	-30.63	------	-----	-1.07	-1.64	-31.32	------	-----	-1.22	-1.96
	.05	-26.16	-28.77	-----	-.80	-.91	-26.66	-26.48	-----	-.94	-1.13
	.10	-14.47	-15.19	-----	-.34	-.98	-14.64	-13.65	-----	-.53	-1.24
	.20	-3.23	-4.69	-5.87	-.54	-1.02	-3.21	-4.23	-5.42	-.67	-1.28
	.40	-1.59	-1.41	-1.73	-.46	-.99	-1.60	-1.37	-1.51	-.62	-1.28
	.65	-.84	-.62	-1.51	-.37	-1.01	-.87	-.74	-1.41	-.51	-1.21
	.95	-.94	-.11	.26	-.11	-.81	-.97	-.10	.25	-.24	-.98
Lower	0.02	-0.28	-----	-0.15	-1.15	-0.74	-0.26	-----	-0.17	-1.22	-0.67
	.04	-.07	-0.81	.02	-1.02	-.48	-.02	-1.01	.04	-.99	-.45
	.06	.06	-.38	-.05	-1.02	-.21	.08	-.54	-.04	-1.10	-.12
	.10	.49	.18	.16	-.83	-.20	.50	.05	.19	-.87	-.12
	.20	.87	.75	.25	-----	-.27	.85	.59	.19	-----	-.21
	.50	.78	.71	.02	-.71	-.29	.75	.51	.02	-.77	-.21
	.75	.76	.71	.21	-.45	-.27	.76	.51	.14	-.55	-.23
Slat											
Upper	0.02			-0.96					-2.82		
	.11			-.76					-1.49		
	.21			-.66					-1.22		
	.37			-.80					-1.28		
	.60			-1.22					-1.68		
	.94			-2.48					-3.14		
	0.02				-1.63					-3.56	
	.10				-.93					-2.78	
	.25				-.93					-1.55	
	.45				-----					-----	
	.65				-1.46					-1.96	
	.94				-2.78					-3.38	
	0.02					-1.19					-3.19
	.12					-.91					-1.91
	.24					-.76					-1.46
	.41					-.88					-1.44
	.63					-1.16					-1.71
	.92					-2.22					-2.99

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(e) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.020$;
$C_\mu = 0.370$; $R = 3.0 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 14.5$					$\alpha = 18.4$				
Wing											
Upper	0	-2.78	0	0.65	-6.24	-4.19	-2.88	-0.04	0.54	-5.97	-4.15
	.01	-2.95	-2.61	-6.15	-5.05	-5.05	-3.04	-2.10	-6.52	-5.03	-5.10
	.02	-3.03	-2.61	-4.09	-3.92	-3.82	-3.09	2.14	-4.35	-4.02	-3.96
	.05	-3.11	-----	-2.63	-2.75	-2.80	-3.20	-----	-2.80	-2.91	-3.11
	.10	-3.11	-2.39	-2.01	-2.22	-2.16	-3.25	-2.06	-2.17	-2.45	-2.56
	.20	-2.05	-1.87	-1.54	-1.76	-1.66	-2.61	-1.86	-1.67	-1.95	-2.06
	.30	-1.30	-1.52	-1.45	-1.55	-1.47	-1.78	-1.65	-1.46	-1.74	-2.07
	.45	-.97	-1.34	-1.45	-1.44	-1.56	-1.20	-1.42	-1.36	-1.54	-2.26
	.60	-.82	-1.18	-1.65	-1.42	-1.87	-.94	-1.17	-1.48	-1.43	-2.57
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.35	----	0.32	0.22	-0.07	0.26	----	0.36	0.28	-0.15
	.05	.59	----	.42	.31	-.06	.64	----	.53	.39	-.16
	.10	.59	----	.42	.31	-.06	.62	----	.53	.40	-.16
	.25	.50	0.55	.42	.31	-.15	.62	0.59	.52	.39	-.16
	.50	.46	.53	.42	.06	-.24	.52	.66	.49	.17	-.29
	.75	.78	.56	.29	-.92	-.38	.78	.64	.38	-.63	-.38
Flap											
Upper	0.01	-33.95	-31.88	-----	-----	-0.85	-32.24	-33.48	-----	-----	-0.76
	.02	-32.33	-----	-----	-1.41	-2.70	-30.61	-----	-----	-1.42	-3.08
	.05	-27.45	-23.63	-----	-1.10	-1.73	-25.76	-23.93	-----	-1.13	-2.01
	.10	-14.99	-11.97	-----	-.73	-1.92	-14.00	-11.94	-----	-.83	-2.44
	.20	-3.15	-3.39	-4.57	-.84	-1.88	-2.89	-3.20	-3.61	-.93	-2.01
	.40	-1.59	-1.19	-1.05	-.80	-1.74	-1.46	-1.07	-.54	-.81	-1.89
	.65	-.83	-.66	-1.13	-.69	-1.56	-.82	-.55	-.80	-.69	-1.66
	.95	-.92	-.05	.18	-.46	-1.25	-.80	-.01	.19	-.36	-1.52
Lower	0.02	-0.21	-----	-0.33	-1.17	-0.80	-0.02	-----	-0.19	-0.79	-0.84
	.04	0	-0.78	-.06	-1.01	-.64	.13	-0.65	.14	-.62	-.76
	.06	.14	-.38	-.14	-1.05	-.32	.28	-.23	.05	-.71	-.32
	.10	.58	.11	.07	-.84	-.28	.66	.27	.29	-.56	-.27
	.20	.96	.62	.15	-----	-.33	1.00	.78	.28	-----	-.38
	.50	.88	.55	.01	-.81	-.39	.92	.71	.16	-.54	-.37
	.75	.85	.55	.16	-.68	-.44	.92	.69	.19	-.48	-.50
Slat											
Upper	0.02			-6.14					-6.19		
	.11			-2.61					-5.94		
	.21			-2.03					-4.00		
	.37			-1.87					-2.09		
	.60			-2.23					-2.34		
	.94			-3.70					-3.98		
	0.02				-3.50					-4.37	
	.10				-3.50					-4.32	
	.25				-3.56					-4.23	
	.45				-----					-----	
	.65				-2.81					-3.69	
	.94				-3.23					-3.39	
	0.02					-3.27					-4.11
	.12					-3.27					-4.11
	.24					-3.28					-4.11
	.41					-2.60					-4.11
	.63					-2.07					-3.50
	.92					-3.32					-3.28

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(f) Slat off; fence off; $C_Q = 0.020$; $C_\mu = 0.370$;
$R = 3.0 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -1.0$					$\alpha = 2.8$				
Wing											
Upper	0	-0.24	0.01	-----	-5.57	-3.26	-2.91	-0.05	0.66	-2.01	-1.48
	.01	-.78	-1.67	-2.64	-3.16	-2.63	-1.94	-3.40	-2.40	-2.01	-1.28
	.02	-.63	-1.16	-1.88	-2.19	-1.83	-1.38	-2.40	-2.48	-2.01	-1.28
	.05	-.44	-----	-1.15	-1.39	-1.09	-.92	-----	-2.57	-2.03	-1.28
	.10	-.37	-.62	-.89	-1.03	-.78	-.75	-1.13	-2.57	-2.01	-1.28
	.20	-.37	-.65	-.87	-.87	-.59	-.59	-.95	-1.65	-1.88	-1.19
	.30	-.46	-.72	-.87	-.87	-.52	-.70	-.96	-1.04	-1.62	-1.08
	.45	-.59	-.86	-1.01	-.86	-.45	-.79	-1.11	-1.04	-1.18	-.88
	.60	-.72	-.92	-1.31	-.95	-.40	-.85	-1.19	-1.35	-.95	-.76
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.31	----	0.43	0.36	0.29	0.41	----	0.34	0.33	0.29
	.05	.24	----	.43	.36	.24	.35	----	.43	.44	.21
	.10	.19	----	.37	.34	.07	.25	----	.42	.42	.08
	.25	.17	0.33	.37	.23	-.11	.22	0.34	.36	.33	-.15
	.50	.22	.50	.38	.05	-.26	.22	.49	.34	.14	-.26
	.75	.67	.59	.30	-1.04	-.26	.62	.50	.23	-.92	-.32
Flap											
Upper	0.01	-31.45	-31.28	-----	-----	-0.41	-32.77	-33.92	-----	-----	-0.45
	.02	-30.08	------	-----	-0.95	-.84	-31.27	------	-----	-0.95	-1.38
	.05	-25.90	-31.53	-----	-.75	-.18	-26.89	-34.18	-----	-.71	-.62
	.10	-14.44	-16.71	-----	-.34	-.29	-14.94	-18.04	-----	-.56	-.57
	.20	-3.35	-5.39	-5.45	-.52	-.33	-3.58	-6.01	-5.67	-.61	-.69
	.40	-1.65	-1.64	-1.53	-.45	-.33	-1.77	-1.79	-1.52	-.55	-.69
	.65	-.81	-.66	-1.18	-.39	-.26	-.95	-.82	-1.08	-.48	-.69
	.95	-.86	-.09	.07	-.27	-.22	-1.06	-.13	.27	-.18	-.62
Lower	0.02	-0.41	-----	-0.06	-1.13	-0.61	-0.53	-----	-0.10	-1.17	-0.72
	.04	-.10	-0.95	.06	-1.07	-.37	-.20	-1.25	-.05	-.99	-.41
	.06	.09	-.49	.04	-1.16	-.33	-.03	-.71	-.07	-1.11	-.20
	.10	.53	.19	.27	-1.24	-.23	.41	-.03	.16	-.94	-.21
	.20	1.00	.81	.43	-----	-.34	.84	.63	.29	------	-.24
	.50	.91	.76	.33	-.84	-.26	.79	.61	.12	-.65	-.24
	.75	.81	.70	.55	-.58	-.26	.71	.55	.35	-.48	-.25

TABLE II.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(f) Slat off; fence off; $C_Q = 0.020$; $C_\mu = 0.370$;

$R = 3.0 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 6.7					α = 10.8				
Wing											
Upper	0	-4.89	-0.08	0.51	-1.88	-1.25	-3.43	-0.03	0.43	-1.15	-1.06
	.01	-3.98	-2.63	-2.15	-1.87	-1.18	-3.44	-2.11	-1.44	-1.15	-1.06
	.02	-3.36	-2.63	-2.14	-1.87	-1.19	-3.49	-2.26	-1.53	-1.15	-1.06
	.05	-2.17	-----	-2.26	-1.87	-1.19	-4.33	-----	-1.53	-1.15	-1.06
	.10	-.94	-3.03	-2.32	-1.86	-1.19	-1.61	-2.53	-1.49	-1.15	-1.06
	.20	-.65	-2.34	-2.42	-1.76	-1.19	-.48	-2.96	-1.46	-1.15	-1.13
	.30	-.75	-1.03	-2.31	-1.69	-1.19	-.61	-2.32	-1.41	-1.15	-1.23
	.45	-.87	-.86	-1.69	-1.50	-1.19	-.76	-1.11	-1.29	-1.15	-1.22
	.60	-.91	-1.08	-1.44	-1.33	-1.15	-.76	-.82	-1.21	-1.22	-1.20
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.45	----	0.24	0.18	0.31	0.45	----	0.21	0.20	0.12
	.05	.44	----	.46	.41	.30	.58	----	.41	.37	.21
	.10	.37	----	.45	.41	.21	.55	----	.41	.37	.11
	.25	.29	0.37	.41	.30	.01	.48	0.44	.36	.27	-.14
	.50	.29	.45	.39	.10	-.18	.47	.52	.31	.11	-.28
	.75	.65	.45	.28	-.61	-.24	.77	.52	.25	-.43	-.38
Flap											
Upper	0.01	-33.55	-33.92	-----	-----	-0.49	-30.95	-32.41	-----	-----	-0.70
	.02	-31.91	------	-----	-1.45	-1.59	-29.46	------	-----	-1.13	-1.75
	.05	-27.30	-33.89	-----	-1.33	-.83	-25.16	-29.81	-----	-1.21	-1.10
	.10	-15.08	-17.87	-----	-1.25	-.91	-13.73	-15.57	-----	-1.21	-1.21
	.20	-3.56	-5.89	-3.68	-1.25	-.91	-3.04	-4.74	-3.17	-1.26	-1.12
	.40	-1.75	-1.78	-1.12	-1.25	-.91	-1.41	-1.43	-1.21	-1.26	-1.12
	.65	-.95	-.81	-.80	-1.10	-.87	-.66	-.75	-.85	-1.27	-1.07
	.95	-.96	-.13	.27	-.57	-.82	-.75	-.20	.04	-.99	-1.02
Lower	0.02	-0.46	-----	-0.21	-0.94	-0.59	-0.21	-----	-0.47	-0.73	-0.79
	.04	-.17	-1.26	-.04	-1.02	-.61	.05	-0.91	-.18	-.79	-1.12
	.06	.01	-.76	-.10	-1.08	-.16	.22	-.49	-.22	-.85	-.41
	.10	.46	-.09	.12	-.96	-.11	.64	.11	.04	-.75	-.31
	.20	.84	.59	.21	-----	-.21	1.06	.67	.13	-----	-.42
	.50	.80	.54	.10	-.85	-.21	.96	.61	.09	-.62	-.44
	.75	.72	.48	.23	-.77	-.33	.89	.58	.23	-.74	-.56

TABLE II.- Concluded

PRESSURE COEFFICIENTS FOR WING WITH 0.54b/2 FLAP, $\delta_f = 70^\circ$

(f) Slat off; fence off; $C_Q = 0.020$; $C_\mu = 0.370$;
$R = 3.0 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 14.8					α = 18.8				
Wing											
Upper	0	-3.32	-0.10	0.39	-1.14	-1.11	-3.38	-0.15	0.58	-1.24	-1.10
	.01	-3.53	-1.99	-1.33	-1.14	-1.11	-3.63	-1.95	-1.35	-1.24	-1.10
	.02	-3.79	-2.07	-1.33	-1.14	-1.12	-3.83	-2.04	-1.35	-1.23	-1.10
	.05	-4.75	-----	-1.39	-1.15	-1.12	-4.09	-----	-1.37	-1.24	-1.10
	.10	-3.63	-2.26	-1.39	-1.16	-1.12	-4.53	-2.06	-1.37	-1.24	-1.10
	.20	-.57	-2.51	-1.29	-1.16	-1.12	-1.68	-2.16	-1.39	-1.24	-1.10
	.30	-.66	-2.24	-1.27	-1.16	-1.12	-.82	-2.02	-1.37	-1.24	-1.10
	.45	-.79	-1.71	-1.18	-1.16	-1.12	-.84	-1.77	-1.28	-1.23	-1.10
	.60	-.82	-1.09	-1.17	-1.25	-1.12	-.84	-1.11	-1.28	-1.24	-1.10
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.29	----	0.18	0.08	0.15	0.23	----	0.10	0.01	0.03
	.05	.52	----	.43	.29	.35	.58	----	.42	.32	.25
	.10	.52	----	.43	.35	.44	.59	----	.53	.44	.22
	.25	.45	0.49	.43	.29	.34	.58	0.56	.51	.41	-.01
	.50	.44	.50	.35	.13	.19	.53	.56	.44	.21	-.18
	.75	.67	.50	.29	-.36	-.30	.77	.56	.36	-.25	-.32
Flap											
Upper	0.01	-31.34	-31.99	-----	-----	-0.50	-31.78	-31.18	-----	-----	-0.57
	.02	-29.83	------	-----	-1.40	-1.32	-30.14	------	-----	-1.42	-1.59
	.05	-25.47	-23.99	-----	-1.27	-1.19	-25.64	-21.64	-----	-1.31	-.94
	.10	-13.91	-12.31	-----	-1.27	-1.14	-13.95	-11.11	-----	-1.23	-1.11
	.20	-3.13	-3.53	-2.93	-1.31	-1.15	-3.01	-3.18	-2.92	-1.30	-1.00
	.40	-1.59	-1.42	-1.06	-1.30	-1.19	-1.56	-1.36	-1.04	-1.30	-.94
	.65	-.88	-.92	-.78	-1.36	-1.26	-.89	-.84	-.67	-1.26	-.95
	.95	-1.00	-.36	-.02	-1.15	-1.19	-.95	-.26	.13	-.98	-.94
Lower	0.02	-0.34	-----	-0.40	-0.70	-0.59	-0.16	-----	-0.18	-0.57	-0.71
	.04	-.11	-0.69	-.13	-.77	-.65	.10	-0.54	0	-.56	-1.09
	.06	.09	-.38	-.15	-.79	-.65	.24	-.18	-.01	-.56	-.28
	.10	.49	.19	.12	-.69	-.59	.65	.34	.26	-.49	-.23
	.20	.85	.66	.22	-----	-.55	1.03	.76	.39	-----	-.23
	.50	.78	.60	.20	-.59	-.51	.99	.76	.37	-.39	-.33
	.75	.71	.55	.34	-.74	-.64	.92	.72	.60	-.51	-.42

TABLE III

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP. $\delta_f = 65^{\circ}$,

0.57b/2 SLAT; $\delta_s = 44^{\circ}$ AND 0.30b/2 FENCE

(a) $C_Q = 0.013$; $C_\mu = 0.123$; $R = 3.0 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -0.7$					$\alpha = 3.2$				
Wing											
Upper	0	0.11	0.01	0.30	-2.32	-1.87	-2.89	-0.05	0.19	-3.46	-2.42
	.01	-.38	-.55	-1.52	-1.76	-1.77	-1.91	-1.89	-2.49	-2.65	-2.63
	.02	-.35	-.48	-1.13	-1.33	-1.33	-1.51	-1.41	-1.68	-1.88	-1.92
	.05	-.23	----	-.83	-.96	-.91	-1.14	----	-1.12	-1.22	-1.36
	.10	-.21	-.32	-.69	-.81	-.74	-.64	-.69	-.89	-.97	-1.00
	.20	-.21	-.42	-.69	-.71	-.57	-.42	-.68	-.77	-.80	-.81
	.30	-.26	-.48	-.69	-.73	-.58	-.42	-.69	-.78	-.80	-.68
	.45	-.37	-.59	-.78	-.77	-.58	-.51	-.74	-.83	-.80	-.69
	.60	-.44	-.71	-.99	-.97	-.79	-.53	-.74	-1.02	-.95	-.78
	.75	----	----	----	----	----	----	----	----	----	----
Lower	0.02	0.28	----	-0.07	-0.03	0	0.56	----	0.32	0.40	0.28
	.05	.19	----	.02	.13	.18	.46	----	.51	.48	.30
	.10	.19	----	.14	.24	.31	.36	----	.48	.48	.25
	.25	.18	0.26	.43	.43	.19	.28	0.39	.40	.46	.12
	.50	.17	.40	.43	.36	.09	.28	.45	.40	.40	.01
	.75	.61	.53	.43	.36	-.03	.58	.58	.48	.40	-.12
Flap											
Upper	0.01	-9.68	-9.08	----	----	-18.11	-9.87	-10.07	----	----	-17.49
	.02	-9.67	----	----	-13.74	-19.89	-9.78	----	----	-13.19	-19.40
	.05	-8.92	-11.44	----	-9.56	-15.68	-8.92	-11.18	----	-9.40	-15.68
	.10	-5.33	-6.32	----	-3.82	-9.07	-5.30	-6.22	----	-3.99	-9.45
	.20	-1.52	-2.32	-2.60	-3.22	-3.04	-1.49	-2.16	-2.39	-3.33	-3.35
	.40	-.64	-.74	-.92	-1.92	-1.72	-.68	-.73	-.78	-1.96	-1.70
	.65	-.41	-.28	-.30	-1.63	-1.85	-.40	-.31	-.22	-1.50	-1.79
	.95	-.03	.22	.26	-.69	-1.45	-.02	.20	.38	-.35	-1.05
Lower	0.02	0.48	0.57	0.43	0.03	-0.60	0.48	0.62	0.54	0.13	-0.75
	.04	.55	.28	.43	.15	-1.37	.56	.35	.46	.27	-1.15
	.06	.55	.42	.43	.25	-1.31	.56	.48	.46	.34	-1.65
	.10	.69	.53	.43	.38	-.24	.70	.63	.46	.49	-.31
	.20	.88	.65	.43	.54	-.15	.86	.72	.52	.49	-.20
	.50	.78	.64	.45	.38	-.08	.77	.72	.59	.49	-.11
	.75	.66	.57	.44	.30	-.09	.68	.64	.62	.38	-.03
Slat											
Upper	0.02			0.39					0.34		
	.11			.46					.18		
	.21			.39					.02		
	.37			.26					-.13		
	.60			-.01					-.48		
	.94			-.70					-1.41		
	0.02				0.39					0.13	
	.10				.36					-.01	
	.25				.21					-.13	
	.45				----					----	
	.65				-.23					-.67	
	.94				-.94					-1.62	
	0.02					0.37					-0.06
	.12					.27					-.23
	.24					.18					-.29
	.41					.01					-.39
	.63					-.21					-.67
	.92					-.87					-1.57

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(a) $C_Q = 0.013$; $C_\mu = 0.123$; $R = 3.0 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 7.0$					$\alpha = 11.0$				
						Wing					
Upper	0	-3.63	-0.03	0.09	-4.56	-2.98	-2.68	-0.02	0.10	-5.36	-3.53
	.01	-2.15	-2.66	-3.42	-3.67	-3.59	-2.44	-2.14	-4.42	-4.25	-4.34
	.02	-1.68	-2.58	-2.28	-2.64	-2.65	-2.45	-2.14	-2.92	-3.14	-3.22
	.05	-1.00	-----	-1.49	-1.71	-1.87	-2.44	-----	-1.88	-2.02	-2.31
	.10	-.70	-1.39	-1.17	-1.34	-1.42	-2.02	-1.85	-1.44	-1.52	-1.77
	.20	-.53	-.86	-.96	-1.04	-1.12	-.66	-1.22	-1.14	-1.23	-1.39
	.30	-.53	-.76	-.93	-.97	-.96	-.58	-.93	-1.04	-1.08	-1.21
	.45	-.55	-.77	-.95	-.91	-.97	-.58	-.84	-1.03	-1.01	-1.22
	.60	-.56	-.77	-1.07	-1.03	-1.13	-.58	-.70	-1.07	-1.08	-1.62
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.44	----	0.37	0.38	0.20	0.35	----	0.32	0.34	0.06
	.05	.43	----	.44	.45	.26	.53	----	.43	.34	.12
	.10	.39	----	.42	.44	.19	.52	----	.42	.41	.11
	.25	.34	0.38	.41	.42	.11	.42	0.41	.42	.40	0
	.50	.32	.44	.41	.37	-.01	.41	.46	.42	.33	-.12
	.75	.66	.52	.41	.37	-.23	.64	.53	.41	.33	-.42
						Flap					
Upper	0.01	-9.25	-9.18	-----	------	-17.51	-9.39	-9.02	-----	------	-18.16
	.02	-9.12	-----	-----	-13.47	-19.29	-9.25	-----	-----	-12.97	-19.88
	.05	-8.31	-9.06	-----	-9.61	-15.70	-8.36	-7.50	-----	-9.29	-16.02
	.10	-4.92	-4.99	-----	-4.21	-9.67	-4.90	-4.11	-----	-4.03	-9.97
	.20	-1.36	-1.67	-2.25	-3.42	-3.72	-1.31	-1.29	-1.44	-2.76	-4.13
	.40	-.59	-.57	-.75	-2.28	-1.87	-.58	-.49	-.37	-1.45	-2.32
	.65	-.37	-.28	-.24	-1.34	-1.21	-.38	-.27	-.11	-.53	-1.39
	.95	-.04	.11	.25	-.15	-.54	-.01	.10	.22	.13	-.66
Lower	0.02	.46	0.52	0.39	0.01	-0.81	0.49	0.62	0.35	-0.01	-0.92
	.04	.52	.31	.39	.19	-1.26	.56	.39	.40	.11	-1.82
	.06	.52	.43	.39	.26	-1.48	.60	.47	.38	.21	-1.51
	.10	.68	.58	.39	.39	-.52	.68	.59	.38	.35	-.64
	.20	.85	.65	.39	----	-.43	.83	.70	.38	-----	-.67
	.50	.75	.65	.47	.42	-.23	.77	.61	.45	.38	-.49
	.75	.66	.58	.46	.38	-.07	.70	.58	.51	.34	-.28
						Slat					
Upper	0.02			-0.72					-1.78		
	.11			-.45					-1.03		
	.21			-.45					-.88		
	.37			-.53					-.94		
	.60			-.86					-1.24		
	.94			-1.89					-2.34		
	0.02				-1.33					-2.46	
	.10				-.70					-2.00	
	.25				-.72					-1.25	
	.45				-----					-----	
	.65				-1.11					-1.51	
	.94				-2.19					-2.66	
	0.02					-1.17					-2.80
	.12					-.83					-1.60
	.24					-.68					-1.23
	.41					-.75					-1.21
	.63					-1.03					-1.49
	.92					-2.05					-2.61

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(a) $C_Q = 0.013$; $C_\mu = 0.123$; $R = 3.0 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 15.0$					$\alpha = 18.9$				
Wing											
Upper	0	-2.46	-0.02	0.12	-5.33	-3.61	-2.30	-0.04	0.09	-4.67	-3.22
	.01	-2.46	-2.10	-4.63	-4.25	-4.56	-2.37	-1.32	-5.08	-3.90	-3.98
	.02	-2.46	-2.08	-3.04	-3.21	-3.39	-2.48	-1.35	-3.35	-3.03	-3.08
	.05	-2.48	-----	-1.96	-2.14	-2.46	-2.49	-----	-2.10	-2.11	-2.27
	.10	-2.39	-1.65	-1.46	-1.66	-1.86	-2.49	-1.38	-1.57	-1.66	-1.83
	.20	-1.42	-1.30	-1.03	-1.23	-1.48	-1.94	-1.30	-1.08	-1.26	-1.49
	.30	-.96	-1.02	-.91	-1.07	-1.35	-1.34	-1.14	-.90	-1.04	-1.46
	.45	-.70	-.83	-.73	-.90	-1.45	-.93	-.88	-.70	-.66	-1.63
	.60	-.56	-.59	-.76	-.90	-1.89	-.82	-.68	-.65	-.79	-1.88
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.33	-----	0.35	0.33	0.08	0.32	-----	0.35	0.37	0
	.05	.53	-----	.48	.39	.07	.56	-----	.49	.37	.08
	.10	.52	-----	.48	.38	.05	.54	-----	.49	.38	.06
	.25	.52	0.47	.48	.38	0	.54	0.46	.48	.38	.06
	.50	.43	.46	.42	.30	-.11	.45	.46	.43	.32	-.07
	.75	.71	.54	.42	.30	-.27	.70	.46	.43	.32	-.07
Flap											
Upper	0.01	-9.42	-8.78	-----	-----	-16.46	-9.13	8.67	-----	-----	-13.30
	.02	-9.16	-----	-----	-8.69	-17.50	-8.84	-----	-----	-7.24	-13.16
	.05	-8.33	-6.26	-----	-6.27	-13.49	-8.02	-5.50	-----	-4.88	-9.03
	.10	-4.88	-3.33	-----	-3.20	-8.00	-4.70	-2.94	-----	-2.27	-4.88
	.20	-1.30	-.93	-0.78	-.88	-3.10	-1.31	-.88	-.69	-.61	-1.57
	.40	-.64	-.41	-.33	-.21	-1.59	-.70	-.47	-.32	-.22	-.79
	.65	-.46	-.24	-.17	-.21	-.92	-.58	-.32	-.19	-.23	-.52
	.95	-.03	-.13	.16	.02	-.40	-.13	.08	.16	-.02	-.30
Lower	0.02	0.51	0.66	0.43	0.11	-0.72	0.53	0.60	0.47	0.18	-0.49
	.04	.58	.49	.42	.16	-1.75	.56	.42	.47	.21	-1.16
	.06	.61	.53	.33	.17	-1.20	.59	.49	.36	.26	-.91
	.10	.73	.66	.40	.30	-.49	.73	.59	.46	.37	-.26
	.20	.87	.76	.42	-----	-.50	.87	.66	.51	-----	-.20
	.50	.75	.69	.51	.30	-.38	.73	.60	.52	.36	-.11
	.75	.71	.64	.51	.30	-.17	.60	.58	.56	.33	.02
Slat											
	0.02			-4.13					-5.47		
	.11			-1.84					-4.27		
	.21			-1.45					-2.22		
	.37			-1.38					-1.67		
	.60			-1.62					-1.99		
	.94			-2.73					-3.19		
Upper	0.02				-2.57					-3.36	
	.10				-2.54					-3.33	
	.25				-2.63					-3.33	
	.45				-----					-----	
	.65				-1.73					-2.74	
	.94				-2.54					-2.59	
	0.02					-2.75					-3.32
	.12					-2.73					-3.26
	.24					-2.45					-3.26
	.41					-1.62					-3.23
	.63					-1.63					-2.56
	.92					-2.69					-2.62

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$.

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(b) $C_Q = 0.014$; $C_\mu = 0.124$; $R = 5.2 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -0.7$					$\alpha = 3.1$				
Wing											
Upper	0	0.11	0	0.18	-2.49	-2.89	-2.75	-0.01	0.12	-3.76	-2.59
	.01	-.36	-.61	-1.63	-1.91	-2.61	-1.76	-2.06	-2.62	-2.84	-2.74
	.02	-.33	-.50	-1.15	-1.43	-1.99	-1.26	-1.42	-1.76	-2.05	-2.04
	.05	-.24	----	-.80	-.96	-1.36	-.78	-----	-1.17	-1.32	-1.42
	.10	-.22	-.37	-.67	-.81	-1.04	-.56	-.66	-.94	-1.08	-1.08
	.20	-.22	-.44	-.62	-.69	-.85	-.42	-.60	-.83	-.91	-.85
	.30	-.26	-.48	-.64	-.69	-.75	-.50	-.60	-.81	-.86	-.73
	.45	-.36	-.59	-.75	-.75	-.85	-.55	-.67	-.90	-.86	-.77
	.60	-.45	-.67	-.96	-.93	-1.04	-.03	-.72	-1.11	-1.04	-.87
	.75	----	----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.18	----	-0.08	0	0.25	0.50	----	0.27	0.33	0.28
	.05	.14	----	.05	.14	.42	.43	----	.45	.46	.30
	.10	.12	----	.27	.26	.42	.35	----	.45	.45	.26
	.25	.11	0.22	.38	.36	.20	.26	0.35	.38	.37	.10
	.50	.18	.37	.38	.33	.08	.27	.40	.41	.33	.01
	.75	.58	.48	.45	.37	-.07	.67	.57	.47	.36	.12
Flap											
Upper	0.01	-10.68	-10.70	-----	------	-28.00	-11.28	-11.10	-----	------	-21.39
	.02	-10.30	------	-----	-15.58	-31.03	-10.86	------	-----	-15.92	-23.78
	.05	-9.55	-12.12	-----	-11.56	-24.56	-10.03	-12.01	-----	-11.50	-19.18
	.10	-5.59	-6.75	-----	-5.54	-14.18	-5.82	-6.63	-----	-5.22	-11.30
	.20	-1.41	-2.31	-2.43	-2.77	-4.71	-1.42	-2.17	-2.65	-3.04	-3.91
	.40	-.79	-.83	-1.18	-1.72	-2.67	-.79	-.76	-.92	-1.82	-1.96
	.65	-.41	-.38	-.38	-1.56	-2.83	-.42	-.34	-.36	-1.68	-1.89
	.95	-.22	.09	.29	-.40	-2.22	-.18	.13	.24	-.51	-1.23
Lower	0.02	0.50	0.52	0.46	0.07	-1.10	0.55	0.59	0.43	0.04	-0.93
	.04	.55	.36	.46	.17	-2.63	.58	.38	.43	.16	-1.80
	.06	.56	.44	.43	.21	-3.55	.61	.48	.40	.21	-3.10
	.10	.62	.52	.46	.39	-.89	.69	.58	.43	.39	-.77
	.20	.79	.60	.48	----	-.32	.83	.66	.44	----	-.33
	.50	.69	.60	.52	.38	-.28	.74	.63	.49	.36	-.26
	.75	.60	.56	.60	.32	-.34	.67	.60	.54	.27	-.18
Slat											
Upper	0.02			0.39					0.36		
	.11			.42					.19		
	.21			.33					.09		
	.37			.16					-.11		
	.60			-.14					-.46		
	.94			-.93					-1.37		
	0.02				0.44					0.19	
	.10				.35					.03	
	.25				.19					-.11	
	.45				-----					-----	
	.65				-.29					-.67	
	.94				-1.11					-1.64	
	0.02					0.39					-0.01
	.12					.24					-.17
	.24					.13					-.22
	.41					-.02					-.35
	.63					-.30					-.66
	.92					-1.02					-1.47

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^{\circ}$,

0.57b/2 SLAT; $\delta_s = 44^{\circ}$ AND 0.30b/2 FENCE

(b) $C_Q = 0.014$; $C_\mu = 0.124$; $R = 5.2 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = 7.0$					$\alpha = 10.9$				
Wing											
Upper	0	-5.17	-0.08	0.03	-4.88	-2.96	-6.68	-0.19	-0.01	-5.72	-3.57
	.01	-2.61	-3.51	-3.87	-3.82	-3.46	-3.20	-2.24	-4.47	-4.49	-4.32
	.02	-1.78	-2.95	-2.59	-2.79	-2.60	-2.51	-2.20	-2.98	-3.32	-3.22
	.05	-1.17	----	-1.66	-1.78	-1.83	-2.11	----	-1.89	-2.09	-2.30
	.10	-.82	-1.25	-1.30	-1.41	-1.39	-1.18	-1.92	-1.45	-1.60	-1.74
	.20	-.61	-.80	-1.05	-1.13	-1.11	-.78	-1.25	-1.11	-1.24	-1.36
	.30	-.57	-.73	-1.00	-1.04	-.94	-.67	-1.00	-1.03	-1.09	-1.16
	.45	-.58	-.79	-1.04	-1.02	-.95	-.61	-.93	-1.01	-1.03	-1.19
	.60	-.62	-.83	-1.21	-1.16	-1.09	-.61	-.82	-1.11	-1.14	-1.46
	.75	----	----	----	----	----	----	----	----	----	----
Lower	0.02	0.41	----	0.37	0.35	0.19	0.41	----	0.37	0.35	0.10
	.05	.44	----	.46	.45	.21	.55	----	.46	.44	.14
	.10	.38	----	.46	.43	.19	.49	----	.46	.46	.13
	.25	.31	0.39	.41	.39	.08	.40	0.43	.42	.41	.04
	.50	.31	.39	.42	.27	.03	.32	.41	.42	.28	-.06
	.75	.65	.54	.47	.33	.18	.68	.54	.47	.36	-.31
Flap											
Upper	0.01	-11.11	-11.00	----	----	-20.11	-10.62	-10.68	----	----	-20.15
	.02	-10.66	----	----	-15.85	-22.29	-10.10	----	----	-15.49	-22.09
	.05	-9.78	-10.69	----	-11.39	-18.09	-9.19	-8.79	----	-11.43	-17.87
	.10	-5.69	-5.87	----	-5.04	-10.88	-5.28	-4.72	----	-5.40	-10.91
	.20	-1.38	-1.91	-2.62	-3.17	-3.96	-1.21	-1.45	-1.78	-2.82	-4.18
	.40	-.77	-.70	-.92	-1.87	-1.95	-.67	-.59	-.53	-1.28	-2.17
	.65	-.45	-.34	-.36	-1.69	-1.35	-.40	-.34	-.11	-.61	-1.25
	.95	-.19	.12	.20	-.53	-.75	-.17	.07	.13	.11	-.62
Lower	0.02	0.52	0.59	0.39	0.01	-0.98	0.56	0.61	0.40	0	-1.00
	.04	.55	.36	.41	.13	-1.67	.60	.41	.42	.14	-1.65
	.06	.61	.47	.39	.18	-2.69	.64	.51	.39	.20	-2.38
	.10	.67	.56	.39	.38	-.83	.71	.59	.42	.36	-.79
	.20	.82	.66	.42	----	-.45	.85	.67	.41	----	-.58
	.50	.73	.61	.46	.32	-.33	.74	.61	.46	.36	-.43
	.75	.62	.57	.50	.26	-.20	.64	.56	.47	.33	-.24
Slat											
Upper	0.02			-0.71					-1.78		
	.11			-.47					-1.06		
	.21			-.51					-.91		
	.37			-.64					-.98		
	.60			-1.01					-1.33		
	.94			-2.12					-2.52		
	0.02				-1.41					-3.00	
	.10				-.85					-1.47	
	.25				-.76					-1.19	
	.45				----					----	
	.65				-1.27					-1.61	
	.94				-2.43					-2.86	
	0.02					-1.30					-2.93
	.12					-.91					-1.72
	.24					-.75					-1.30
	.41					-.83					-1.30
	.63					-1.14					-1.59
	.92					-2.23					-2.80

[redacted]

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(b) $C_Q = 0.014$; $C_\mu = 0.124$; $R = 5.2 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 14.9					α = 18.9				
Wing											
Upper	0	-3.09	-0.05	0.02	-6.47	-4.16	-2.33	-0.02	0	-6.71	-3.92
	.01	-3.07	-2.13	-4.96	-5.13	-5.04	-2.36	-1.40	-5.50	-5.40	-4.77
	.02	-3.12	-2.17	-3.33	-3.77	-3.74	-2.38	-1.41	-3.69	-3.98	-3.59
	.05	-3.19	-----	-2.09	-2.38	-2.67	-2.36	-----	-2.28	-2.48	-2.62
	.10	-2.55	-1.97	-1.57	-1.75	-2.02	-2.34	-1.43	-1.71	-1.83	-2.07
	.20	-1.14	-1.42	-1.14	-1.29	-1.57	-1.97	-1.33	-1.19	-1.31	-1.67
	.30	-.80	-1.10	-.98	-1.09	-1.38	-1.37	-1.15	-.99	-1.05	-1.58
	.45	-.64	-.92	-.88	-.95	-1.46	-.94	-.91	-.81	-.89	-1.78
	.60	-.60	-.79	-.89	-.96	-1.80	-.78	-.72	-.72	-.85	-2.08
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.38	----	0.33	0.32	0.03	0.36	----	0.33	0.33	0.02
	.05	.56	----	.42	.41	.09	.58	----	.44	.46	.05
	.10	.56	----	.45	.46	.08	.62	----	.46	.49	.05
	.25	.46	0.47	.42	.43	.04	.55	0.53	.48	.46	.05
	.50	.32	.37	.39	.22	-.06	.34	.42	.39	.26	-.02
	.75	.70	.53	.42	.36	-.20	.73	.58	.46	.39	-.15
Flap											
Upper	0.01	-10.39	-10.55	-----	------	-20.07	-10.00	-9.97	-----	------	-17.48
	.02	-9.83	------	-----	-12.30	-21.79	-9.42	-----	-----	-10.01	-18.25
	.05	-8.90	-7.01	-----	-9.17	-17.48	-8.47	-6.19	-----	-7.25	-13.79
	.10	-5.15	-3.65	-----	-4.84	-10.64	-4.89	-3.18	-----	-3.94	-7.97
	.20	-1.21	-1.09	-0.89	-1.40	-4.00	-1.11	-.89	-0.77	-1.07	-2.67
	.40	-.71	-.53	-.37	-.29	-2.07	-.68	-.45	-.32	-.26	-1.24
	.65	-.44	-.38	-.22	-.13	-1.31	-.49	-.30	-.16	-.18	-.66
	.95	-.17	.02	.07	.21	-.65	-.16	.09	.10	.17	-.36
Lower	0.02	0.56	0.61	0.32	0.08	-0.58	0.62	0.68	0.40	0.19	-0.80
	.04	.61	.38	.37	.14	-2.70	.62	.50	.44	.23	-1.78
	.06	.65	.46	.32	.22	-2.20	.68	.57	.41	.26	-1.79
	.10	.73	.54	.37	.39	-.68	.75	.64	.43	.43	-.48
	.20	.85	.60	.36	----	-.43	.87	.71	.44	----	-.31
	.50	.76	.53	.41	.39	-.34	.75	.63	.48	.43	-.23
	.75	.63	.46	.42	.37	-.18	.63	.56	.46	.41	-.08
Slat											
Upper	0.02			-3.19					-5.06		
	.11			-1.75					-2.72		
	.21			-1.37					-2.08		
	.37			-1.30					-1.87		
	.60			-1.60					-2.12		
	.94			-2.76					-3.39		
	0.02				-5.66					-7.47	
	.10				-2.44					-3.70	
	.25				-1.75					-2.61	
	.45				-----					-----	
	.65				-1.93					-2.44	
	.94				-3.19					-3.67	
	0.02					-4.23					-4.56
	.12					-2.44					-3.94
	.24					-1.77					-3.46
	.41					-1.65					-2.84
	.63					-1.90					-2.26
	.92					-3.21					-3.00

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(c) $C_Q = 0.019$; $C_\mu = 0.247$; $R = 3.6 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -1.0$					$\alpha = 2.8$				
Wing											
Upper	0	-0.26	0	0.26	-2.87	-2.40	-2.86	-0.05	0.43	-4.34	-2.86
	.01	-.62	-.83	-1.87	-2.19	-2.35	-1.82	-2.43	-2.99	-3.34	-3.11
	.02	-.46	-.68	-1.31	-1.65	-1.74	-1.37	-1.70	-2.03	-2.44	-2.37
	.05	-.37	----	-.91	-1.13	-1.22	-.92	----	-1.33	-1.61	-1.65
	.10	-.27	-.44	-.77	-.93	-.94	-.64	-.84	-1.09	-1.30	-1.27
	.20	-.27	-.49	-.72	-.80	-.79	-.48	-.73	-.94	-1.08	-1.05
	.30	-.32	-.55	-.76	-.83	-.78	-.51	-.74	-.94	-1.08	-.99
	.45	-.46	-.71	-.91	-.89	-.87	-.59	-.84	-1.07	-1.11	-1.09
	.60	-.53	-.73	-1.18	-1.18	-1.16	-.62	-.90	-1.32	-1.39	-1.30
	.75	----	----	----	----	----	----	----	----	----	----
Lower	0.02	0.27	----	-0.02	0.08	0.29	0.40	----	0.32	0.33	0.24
	.05	.16	----	.09	.27	.29	.37	----	.46	.42	.24
	.10	.15	----	.25	.41	.28	.30	----	.46	.42	.24
	.25	.11	0.28	.37	.41	.13	.24	0.35	.41	.39	.04
	.50	.16	.42	.38	.41	0	.24	.44	.42	.37	-.08
	.75	.58	.54	.46	.41	-.18	.59	.54	.47	.37	-.30
Flap											
Upper	0.01	-17.16	-17.02	----	----	-35.48	-18.20	-18.26	----	----	-35.00
	.02	-15.98	----	----	-26.38	-38.79	-16.90	----	----	-27.18	-38.45
	.05	-14.52	-18.21	----	-20.76	-30.35	-15.27	-19.04	----	-21.37	-30.57
	.10	-8.11	-9.86	----	-12.38	-17.61	-8.46	-10.24	----	-12.78	-18.10
	.20	-1.60	-2.87	-3.23	-4.10	-6.05	-1.61	-3.06	-3.35	-4.31	-6.49
	.40	-.94	-.99	-1.08	-1.24	-3.75	-.97	-1.06	-1.09	-1.35	-3.45
	.65	-.46	-.50	-.43	-.68	-4.33	-.52	-.52	-.41	-.79	-2.41
	.95	-.45	-.00	.16	.10	-1.98	-.42	-.02	.35	.04	-1.37
Lower	0.02	0.54	0.60	0.50	-0.05	-1.88	0.54	0.63	0.56	-0.16	-2.01
	.04	.53	.33	.46	.08	-4.41	.49	.25	.50	-.03	-4.60
	.06	.53	.44	.46	.19	-4.99	.53	.37	.50	.10	-5.42
	.10	.66	.55	.48	.47	-1.55	.64	.51	.51	.38	-1.79
	.20	.86	.67	.48	----	-.57	.82	.63	.51	----	-.75
	.50	.73	.67	.54	.51	-.50	.75	.61	.58	.42	-.61
	.75	.66	.61	.63	.51	-.50	.69	.57	.69	.40	-.42
Slat											
Upper	0.02			0.40					0.37		
	.11			.37					.19		
	.21			.25					.02		
	.37			.12					-.12		
	.60			-.21					-.49		
	.94			-.95					-1.41		
	0.02				0.39					-0.06	
	.10				.27					-.11	
	.25				.12					-.21	
	.45				----					----	
	.65				-.39					-.78	
	.94				-1.22					-1.81	
	0.02					0.30					-0.35
	.12					.10					-.40
	.24					-.02					-.41
	.41					-.14					-.49
	.63					-.41					-.78
	.92					-1.18					-1.79

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84c/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(c) $C_Q = 0.019$; $C_\mu = 0.247$; $R = 3.6 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 6.6					α = 10.6				
Wing											
Upper	0	-3.78	0.03	0.39	-5.64	-3.52	-3.82	-0.01	0.36	-6.32	-4.08
	.01	-2.31	-2.50	-4.08	-4.46	-4.24	-3.09	-2.40	-4.78	-4.95	-4.96
	.02	-1.88	-2.48	-2.74	-3.29	-3.17	-2.98	-2.34	-3.21	-3.67	-3.71
	.05	-1.41	-----	-1.77	-2.14	-2.31	-3.00	-----	-2.05	-2.36	-2.63
	.10	-.92	-1.62	-1.38	-1.69	-1.76	-1.38	-2.14	-1.58	-1.82	-2.06
	.20	-.65	-.86	-1.11	-1.39	-1.42	-.67	-1.47	-1.22	-1.46	-1.63
	.30	-.58	-.77	-1.09	-1.31	-1.25	-.68	-1.17	-1.13	-1.30	-1.46
	.45	-.64	-.83	-1.14	-1.32	-1.35	-.71	-1.06	-1.15	-1.28	-1.55
	.60	-.64	-.83	-1.35	-1.54	-1.70	-.68	-.97	-1.32	-1.50	-2.15
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.43	-----	0.43	0.30	0.11	0.43	-----	0.37	0.34	0.04
	.05	.43	-----	.51	.39	.11	.53	-----	.48	.46	.10
	.10	.43	-----	.51	.39	.11	.46	-----	.46	.51	.10
	.25	.34	0.47	.50	.34	-.01	.38	0.47	.46	.51	0
	.50	.35	.53	.50	.30	-.19	.39	.49	.46	.40	-.17
	.75	.67	.64	.54	.30	-.45	.67	.54	.51	.39	-.44
Flap											
Upper	0.01	-17.39	-16.80	-----	-----	-35.46	-17.81	-17.79	-----	-----	-34.75
	.02	-16.06	-----	-----	-28.30	-38.50	-16.38	-----	-----	-26.84	-37.06
	.05	-14.46	-15.76	-----	-22.24	-30.46	-14.71	-14.68	-----	-20.96	-28.85
	.10	-8.00	-8.37	-----	-13.34	-18.32	-8.07	-7.67	-----	-12.40	-17.29
	.20	-1.48	-2.33	-3.20	-4.57	-6.80	-1.44	-2.08	-2.60	-4.10	-6.43
	.40	-.90	-.75	-.97	-1.50	-3.59	-.86	-.76	-.71	-1.21	-3.32
	.65	-.43	-.32	-.32	-.89	-2.42	-.45	-.44	-.16	-.66	-2.00
	.95	-.32	-.17	.45	-.05	-1.41	-.41	.03	.41	.12	-1.14
Lower	0.02	0.60	0.71	0.62	-0.30	-2.17	0.64	0.71	0.61	-0.09	-2.06
	.04	.54	.42	.63	-.12	-4.99	.61	.37	.59	.05	-4.85
	.06	.59	.54	.58	.04	-5.00	.62	.48	.58	.17	-4.32
	.10	.72	.66	.61	.30	-1.93	.75	.61	.58	.44	-1.70
	.20	.88	.78	.61	-----	-.99	.94	.69	.58	-----	-.94
	.50	.78	.77	.65	.30	-.75	.84	.66	.64	.46	-.72
	.75	.72	.72	.75	.30	-.54	.74	.62	.74	.46	-.45
Slat											
Upper	0.02			-0.79					-2.62		
	.11			-.56					-1.33		
	.21			-.56					-1.10		
	.37			-.67					-1.13		
	.60			-1.03					-1.49		
	.94			-2.24					-2.81		
	0.02				-1.60					-3.80	
	.10				-.91					-2.26	
	.25				-.84					-1.44	
	.45				-----					-----	
	.65				-1.36					-1.83	
	.94				-2.61					-3.14	
	0.02					-1.70					-3.20
	.12					-1.14					-2.61
	.24					-.89					-1.81
	.41					-.98					-1.49
	.63					-1.29					-1.76
	.92					-2.49					-3.04

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(c) $C_Q = 0.019$; $C_\mu = 0.247$; $R = 3.6 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 14.6					α = 18.6				
Wing											
Upper	0	-2.80	-0.02	0.26	-5.72	-3.83	-2.61	-0.03	0.18	-5.20	-3.75
	.01	-2.87	-2.36	-5.34	-4.55	-4.70	-2.70	-1.64	-5.98	-4.38	-4.55
	.02	-2.95	-2.35	-3.56	-3.51	-3.55	-2.75	-1.70	-4.01	-3.47	-3.55
	.05	-3.08	-----	-2.24	-2.33	-2.64	-2.86	-----	-2.54	-2.48	-2.80
	.10	-2.79	-2.11	-1.71	-1.89	-2.12	-2.73	-1.66	-1.91	-2.08	-2.37
	.20	-1.22	-1.52	-1.28	-1.45	-1.74	-1.95	-1.51	-1.40	-1.59	-2.06
	.30	-.83	-1.19	-1.13	-1.23	-1.62	-1.28	-1.30	-1.24	-1.40	-2.06
	.45	-.75	-.99	-1.09	-1.14	-1.79	-.95	-1.05	-1.07	-1.22	-2.39
	.60	-.68	-.78	-1.14	-1.23	-2.36	-.84	-.78	-1.08	-1.24	-2.67
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.40	----	0.35	0.33	0	0.33	----	0.37	0.33	-0.07
	.05	.56	----	.48	.45	.05	.61	----	.50	.43	-.07
	.10	.54	----	.47	.44	.05	.61	----	.49	.48	-.07
	.25	.47	0.54	.47	.44	0	.61	0.58	.48	.48	-.06
	.50	.46	.54	.45	.38	-.07	.51	.58	.47	.40	-.11
	.75	.71	.60	.44	.38	-.19	.81	.65	.52	.39	-.17
Flap											
Upper	0.01	-17.58	-17.65	-----	------	-31.75	-17.03	-17.32	-----	------	-31.81
	.02	-16.03	------	-----	-21.27	-33.37	-15.42	------	-----	-19.22	-32.86
	.05	-14.38	-12.94	-----	-15.84	-25.16	-13.77	-11.63	-----	-13.79	-24.16
	.10	-7.89	-6.61	-----	-9.13	-14.37	-7.51	-5.82	-----	-7.84	-13.52
	.20	-1.41	-1.52	-1.46	-2.76	-4.67	-1.31	-1.34	-1.32	-2.32	-4.20
	.40	-.90	-.61	-.36	-.75	-2.52	-.85	-.53	-.33	-.83	-2.05
	.65	-.52	-.37	-.12	-.44	-2.09	-.51	-.32	-.11	-.63	-1.60
	.95	-.38	.06	.30	.11	-1.52	-.31	.13	.23	.03	-.95
Lower	0.02	0.64	0.84	0.58	0	-1.76	0.74	0.91	0.59	0.10	-1.76
	.04	.59	.49	.54	.06	-4.09	.70	.53	.53	.10	-3.30
	.06	.64	.54	.54	.19	-4.09	.70	.63	.53	.16	-4.01
	.10	.78	.67	.53	.44	-1.13	.83	.76	.53	.46	-1.04
	.20	.95	.78	.53	----	-.44	1.00	.83	.55	----	-.41
	.50	.82	.70	.55	.45	-.40	.90	.75	.55	.41	-.41
	.75	.74	.70	.66	.45	-.29	.82	.74	.64	.41	-.23
Slat											
Upper	0.02			-5.13					-6.89		
	.11			-2.19					-4.09		
	.21			-1.68					-2.65		
	.37			-1.54					-2.05		
	.60			-1.83					-2.26		
	.94			-3.07					-3.59		
	0.02				-3.13					-3.80	
	.10				-3.10					-3.76	
	.25				-3.16					-3.72	
	.45				-----					-----	
	.65				-2.30					-3.21	
	.94				-2.73					-2.97	
	0.02					-3.17					-3.92
	.12					-3.17					-3.93
	.24					-3.17					-3.93
	.41					-3.00					-3.93
	.63					-2.20					-3.42
	.92					-2.85					-3.03

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.37b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(d) $C_Q = 0.024$; $C_\mu = 0.382$; $R = 3.0 \times 10^6$

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		$\alpha = -1.3$					$\alpha = 2.6$				
Wing											
Upper	0	-1.94	0.01	1.18	-3.66	-2.63	-2.75	-0.01	0.78	-4.91	-3.06
	.01	-1.46	-1.25	-2.08	-2.75	-2.68	-2.05	-2.53	-3.41	-3.79	-3.57
	.02	-.92	-.85	-1.43	-1.99	-1.94	-1.76	-1.87	-2.26	-2.77	-2.62
	.05	-.65	-----	-.98	-1.34	-1.38	-1.53	-----	-1.51	-1.87	-1.88
	.10	-.48	-.50	-.81	-1.13	-1.07	-1.14	-.89	-1.21	-1.47	-1.46
	.20	-.36	-.56	-.77	-.95	-.89	-.63	-.80	-1.03	-1.26	-1.24
	.30	-.48	-.60	-.80	-1.01	-.89	-.63	-.81	-1.03	-1.27	-1.24
	.45	-.58	-.73	-.98	-1.11	-.97	-.74	-.93	-1.16	-1.30	-1.42
	.60	-.64	-.80	-1.31	-1.45	-1.24	-.78	-1.02	-1.32	-1.63	-1.65
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.37	----	0.08	0.25	0.28	0.53	----	0.38	0.34	0.16
	.05	.24	----	.27	.46	.30	.44	----	.49	.40	.23
	.10	.21	----	.43	.46	.25	.37	----	.45	.39	.11
	.25	.12	0.33	.47	.45	.10	.24	0.36	.43	.39	.01
	.50	.12	.49	.47	.41	-.01	.24	.46	.43	.32	-.11
	.75	.58	.54	.54	.44	-.20	.66	.55	.46	.32	-.32
Flap											
Upper	0.01	-22.76	-21.57	-----	------	-46.94	-25.76	-25.30	-----	------	-47.23
	.02	-21.01	------	-----	-36.16	-50.75	-23.67	------	-----	-37.83	-50.91
	.05	-18.93	-23.50	-----	-28.07	-38.63	-21.31	-25.58	-----	-29.42	-39.10
	.10	-10.38	-12.56	-----	-16.59	-21.99	-11.68	-13.58	-----	-17.39	-22.88
	.20	-1.95	-3.36	-3.73	-5.38	-7.08	-2.18	-3.80	-3.92	-5.74	-7.85
	.40	-1.21	-1.16	-1.17	-1.49	-3.85	-1.35	-1.26	-1.26	-1.73	-4.19
	.65	-.55	-.55	-.47	-.91	-4.40	-.62	-.66	-.49	-1.08	-4.78
	.95	-.63	-.10	.54	.10	-2.47	-.71	-.09	.30	-.11	-2.43
Lower	0.02	0.46	----	0.67	-0.15	-2.58	0.50	0.79	0.59	-0.30	-2.80
	.04	.41	0.31	.58	.01	-5.61	.40	.20	.51	-.17	-5.92
	.06	.31	.43	.58	.20	-6.58	.33	.37	.53	0	-6.32
	.10	.61	.60	.58	.53	-2.19	.63	.55	.53	.39	-2.64
	.20	.79	.76	.58	-----	-.64	.85	.68	.54	-----	-.97
	.50	.72	.74	.62	.56	-.52	.72	.66	.53	.35	-.73
	.75	.63	.69	.77	.58	-.40	.65	.66	.70	.35	-.53
Slat											
Upper	0.02			0.32					-0.03		
	.11			.18					-.16		
	.21			.08					-.24		
	.37			-.14					-.39		
	.60			-.39					-.77		
	.94			-1.27					-1.89		
	0.02				0.27					-0.47	
	.10				.15					-.35	
	.25				-.03					-.44	
	.45				-----					-----	
	.65				-.57					-1.04	
	.94				-1.56					-2.19	
	0.02					0.18					-0.65
	.12					-.04					-.54
	.24					-.11					-.56
	.41					-.32					-.67
	.63					-.58					-.99
	.92					-1.48					-2.00

TABLE III.- Continued

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(d) $C_Q = 0.024$; $C_\mu = 0.382$; $R = 3.0 \times 10^6$ - Continued

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 6.4					α = 10.3				
Wing											
Upper	0	-3.84	-0.04	-5.88	-5.75	-3.80	-2.90	-0.04	0.46	-6.78	-4.24
	.01	-2.65	-2.85	-4.61	-4.55	-4.62	-2.82	-2.70	-5.32	-5.32	-5.21
	.02	-2.36	-2.80	-3.44	-3.42	-3.43	-2.90	-2.64	-3.56	-4.00	-3.89
	.05	-1.89	-----	-2.25	-2.21	-2.47	-3.18	-----	-2.28	-2.62	-2.82
	.10	-1.21	-2.12	-1.73	-1.68	-1.89	-2.58	-2.42	-1.76	-2.00	-2.23
	.20	-.72	-1.27	-1.40	-1.42	-1.56	-.78	-1.76	-1.39	-1.63	-1.79
	.30	-.72	-1.15	-1.34	-1.31	-1.33	-.68	-1.47	-1.39	-1.50	-1.66
	.45	-.80	-1.15	-1.36	-1.37	-1.39	-.81	-1.32	-1.39	-1.50	-1.79
	.60	-.80	-1.20	-1.67	-1.64	-1.94	-.78	-1.17	-1.61	-1.72	-2.70
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.33	-----	0.40	0.36	0.10	.41	-----	0.36	0.38	0.01
	.05	.41	-----	.45	.46	.10	.54	-----	.49	.46	.01
	.10	.37	-----	.44	.46	.10	.54	-----	.48	.49	0
	.25	.29	0.34	.44	.46	-.03	.43	0.48	.46	.49	-.07
	.50	.29	.43	.36	.38	-.23	.41	.55	.45	.44	-.25
	.75	.65	.48	.35	.36	-.47	.70	.61	.50	.44	-.50
Flap											
Upper	0.01	-25.80	-26.47	-----	-----	-46.33	-24.45	-26.06	-----	-----	-46.06
	.02	-23.49	-----	-----	-36.49	-49.25	-22.24	-----	-----	-36.94	-48.10
	.05	-20.98	-24.24	-----	-28.37	-37.43	-19.75	-21.10	-----	-28.55	-35.74
	.10	-11.36	-12.69	-----	-16.78	-22.20	-10.61	-10.74	-----	-16.80	-21.08
	.20	-1.95	-3.54	-5.60	-5.53	-7.69	-1.73	-2.76	-3.56	-5.40	-7.30
	.40	-1.25	-1.23	-1.68	-1.68	-3.82	-1.08	-.92	-1.05	-1.54	-3.52
	.65	-.56	-.71	-1.02	-1.03	-4.05	-.50	-.54	-.41	-.93	-3.24
	.95	-.61	-.13	-.05	-.05	-2.19	-.54	.05	.28	.07	-1.80
Lower	0.02	0.62	0.59	-0.29	-0.30	-2.69	0.64	0.94	0.66	-0.19	-2.53
	.04	.48	.11	-.15	-.13	-6.25	.54	.31	.57	-.03	-6.12
	.06	.46	.24	.07	.03	-5.58	.54	.51	.58	.18	-4.93
	.10	.73	.45	.40	.41	-2.58	.74	.69	.58	.55	-2.28
	.20	.93	.63	.64	-----	-1.10	.93	.81	.58	-----	-1.08
	.50	.82	.54	.38	.40	-.82	.81	.81	.58	.54	-.82
	.75	.76	.54	.43	.38	-.56	.72	.74	.72	.54	-.53
Slat											
Upper	0.02			-1.14					-2.91		
	.11			-.84					-1.56		
	.21			-.71					-1.32		
	.37			-.85					-1.32		
	.60			-1.25					-1.76		
	.94			-2.61					-3.19		
	0.02				-2.01					-3.30	
	.10				-1.13					-3.21	
	.25				-1.05					-2.04	
	.45				-----					-----	
	.65				-1.59					-1.99	
	.94				-2.96					-3.36	
	0.02					-2.23					-3.15
	.12					-1.39					-3.08
	.24					-1.10					-2.62
	.41					-1.16					-1.76
	.63					-1.51					-1.89
	.92					-2.80					-3.30

TABLE III.- Concluded

PRESSURE COEFFICIENTS FOR WING WITH 0.84b/2 FLAP, $\delta_f = 65^\circ$,

0.57b/2 SLAT; $\delta_s = 44^\circ$ AND 0.30b/2 FENCE

(d) $C_Q = 0.024$; $C_\mu = 0.382$; $R = 3.0 \times 10^6$ - Concluded

Surface	x/c, x_f/c_f, or x_s/c_s	P for values of $\frac{y}{b/2}$ of -									
		0.18	0.39	0.60	0.72	0.93	0.18	0.39	0.60	0.72	0.93
		α = 14.3					α = 18.3				
Wing											
Upper	0	-2.79	-0.03	0.54	-6.07	-4.12	-2.75	-0.05	0.39	-5.58	-4.16
	.01	-2.89	-2.59	-6.25	-4.91	-5.09	-2.85	-1.89	-6.30	-4.64	-5.14
	.02	-3.00	-2.59	-4.18	-3.85	-3.89	-2.92	-1.89	-4.21	-3.71	-4.05
	.05	-3.08	-----	-2.69	-2.70	-2.92	-3.01	-----	-2.72	-2.65	-3.25
	.10	-3.03	-2.37	-2.04	-2.14	-2.37	-3.00	-1.86	-2.13	-2.18	-2.77
	.20	-1.92	-1.85	-1.59	-1.69	-1.97	-2.29	-1.69	-1.58	-1.72	-2.45
	.30	-1.20	-1.49	-1.47	-1.55	-1.97	-1.61	-1.56	-1.44	-1.56	-2.55
	.45	-.96	-1.28	-1.41	-1.44	-2.22	-1.12	-1.25	-1.34	-1.41	-2.95
	.60	-.84	-1.07	-1.56	-1.64	-3.04	-.92	-1.06	-1.34	-1.51	-3.24
	.75	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lower	0.02	0.36	-----	0.33	0.37	0	0.30	-----	0.31	0.36	-0.13
	.05	.53	-----	.45	.47	0	.56	-----	.47	.45	-.13
	.10	.52	-----	.45	.43	0	.56	-----	.48	.48	-.13
	.25	.44	0.44	.45	.44	0	.56	0.54	.48	.48	-.13
	.50	.38	.53	.45	.42	-.12	.48	.56	.48	.40	-.24
	.75	.70	.53	.45	-.14	-.22	.74	.58	.48	.40	-.26
Flap											
Upper	0.01	-25.84	-24.96	-----	-----	-45.05	-24.10	-25.09	-----	-----	-45.03
	.02	-23.33	-----	-----	-32.78	-46.56	-21.56	-----	-----	-28.36	-45.74
	.05	-20.85	-18.32	-----	-24.65	-33.82	-19.19	-17.24	-----	-20.72	-32.18
	.10	-11.20	-9.20	-----	-14.18	-18.82	-10.35	-8.50	-----	-11.77	-17.13
	.20	-1.93	-2.24	-2.58	-4.33	-5.70	-1.66	-1.97	-2.00	-3.49	-4.99
	.40	-1.30	-.92	-.76	-1.21	-3.13	-1.18	-.74	-.52	-1.10	-2.85
	.65	-.70	-.68	-.39	-.78	-2.48	-.68	-.53	-.21	-.75	-2.20
	.95	-.70	-.14	.05	.08	-1.92	-.62	-.04	.06	.02	-1.84
Lower	0.02	0.58	0.75	0.45	-0.14	-2.60	0.68	0.78	0.46	-0.06	-2.92
	.04	.45	.22	.37	-.06	-5.74	.51	.32	.47	-.06	-5.43
	.06	.46	.36	.37	.10	-5.97	.51	.40	.47	.05	-6.45
	.10	.69	.50	.38	.51	-1.72	.76	.56	.47	.50	-2.47
	.20	.85	.65	.38	-----	-.55	.93	.68	.47	-----	-.65
	.50	.74	.57	.35	.46	.53	.82	.62	.38	.40	-.65
	.75	.62	.57	.49	.46	-.38	.75	.56	.47	.40	-.52
Slat											
Upper	0.02			-6.18					-5.41		
	.11			-2.53					-5.48		
	.21			-1.99					-4.27		
	.37			-1.83					-1.84		
	.60			-2.13					-1.99		
	.94			-3.63					-3.52		
	0.02				-3.47					-4.05	
	.10				-3.47					-4.05	
	.25				-3.49					-4.03	
	.45				-----					-----	
	.65				-2.78					-3.48	
	.94				-3.13					-3.08	
	0.02					-3.60					-4.16
	.12					-3.60					-4.16
	.24					-3.60					-4.16
	.41					-3.50					-4.16
	.63					-2.69					-3.78
	.92					-3.19					-3.20

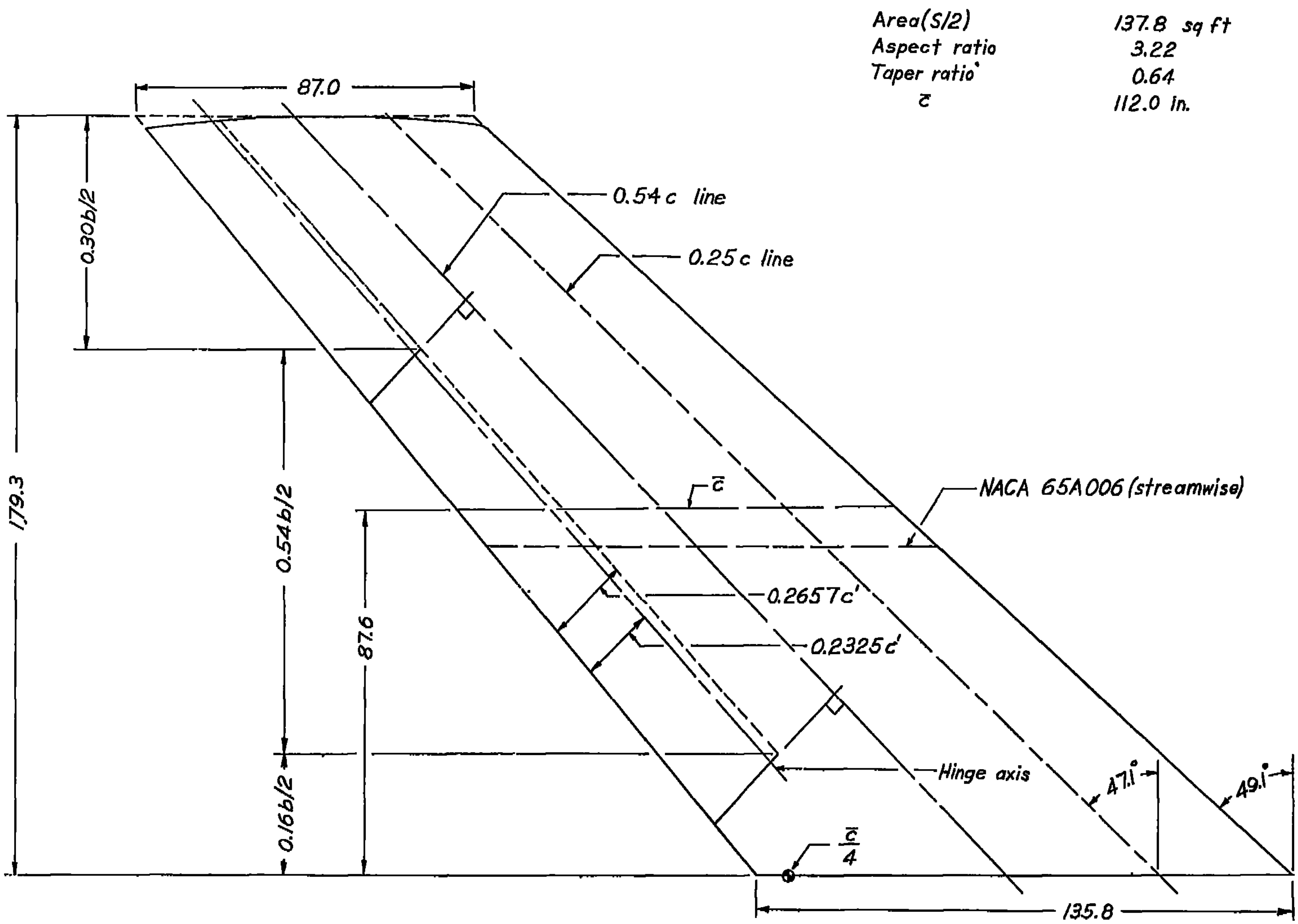
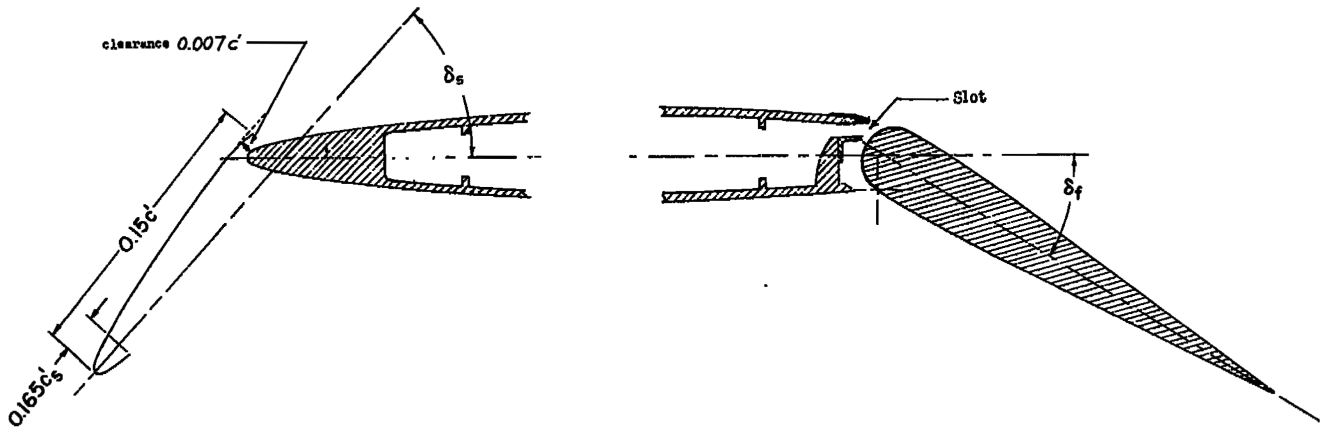
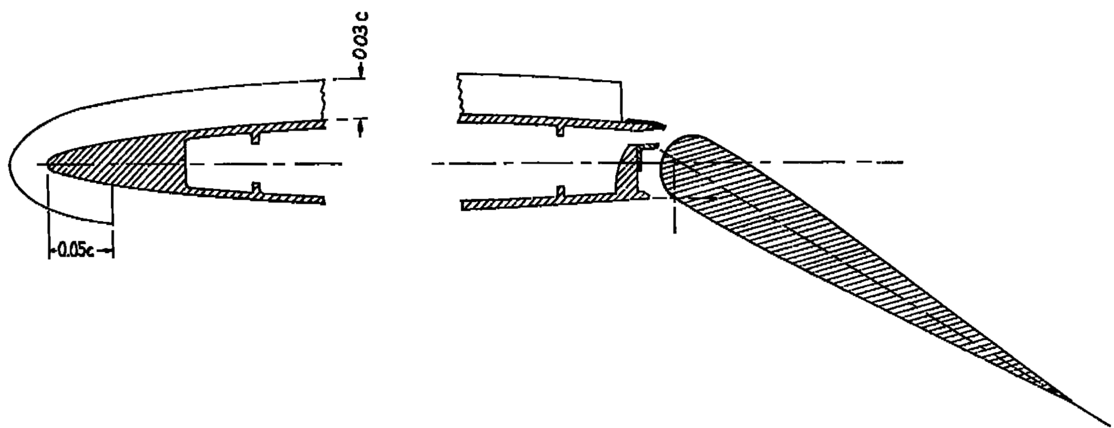


Figure 1.- Plan form of the semispan 49.1° sweptback wing. All dimensions are given in inches unless otherwise noted.



(a) Slat and blowing slot.



(b) Fence and blowing slot.

Figure 2.- Detail of fence, slat, and blowing slot.

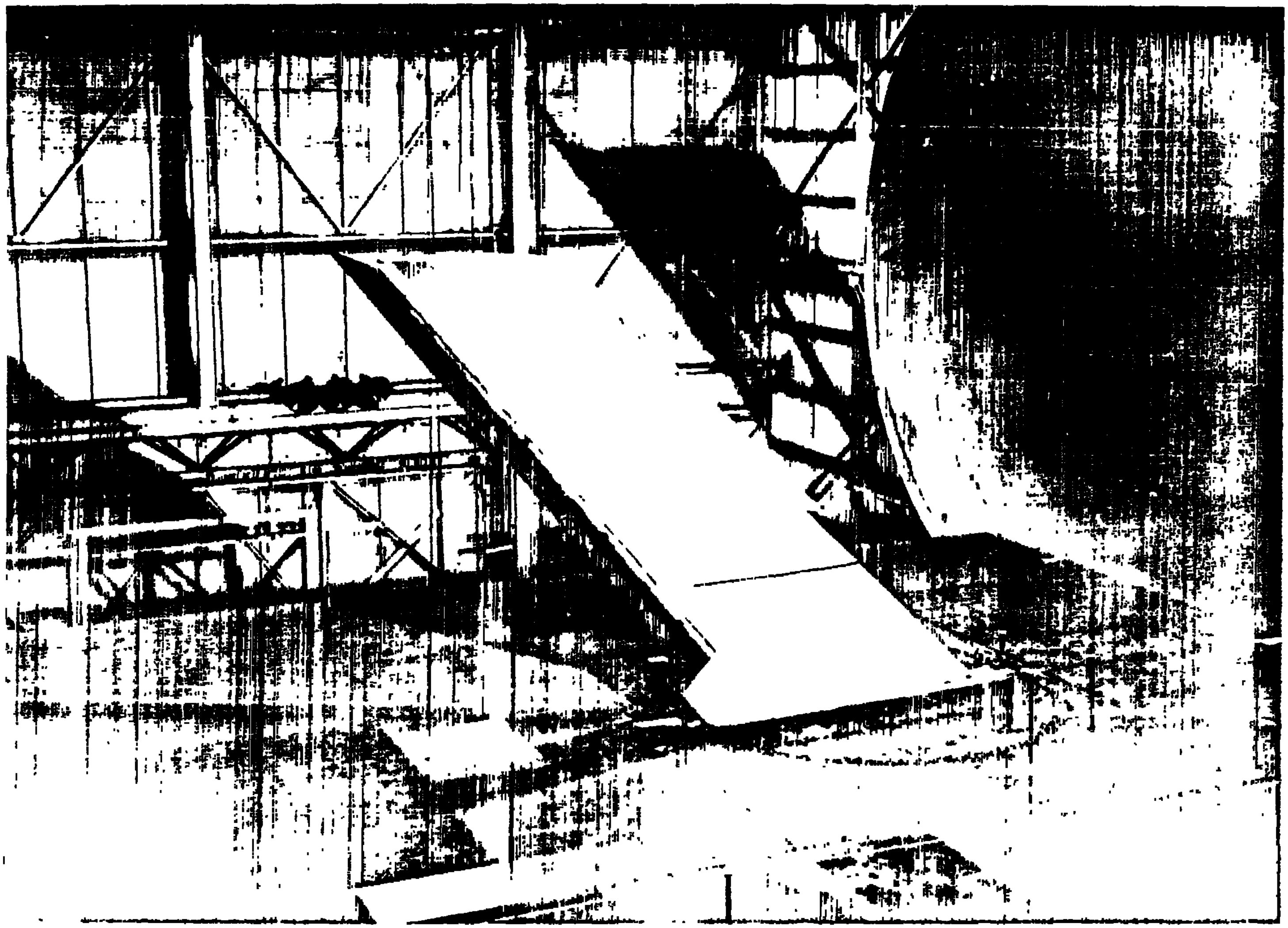


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Figure 3.- Photograph of the semispan wing mounted in the Langley full-scale tunnel.

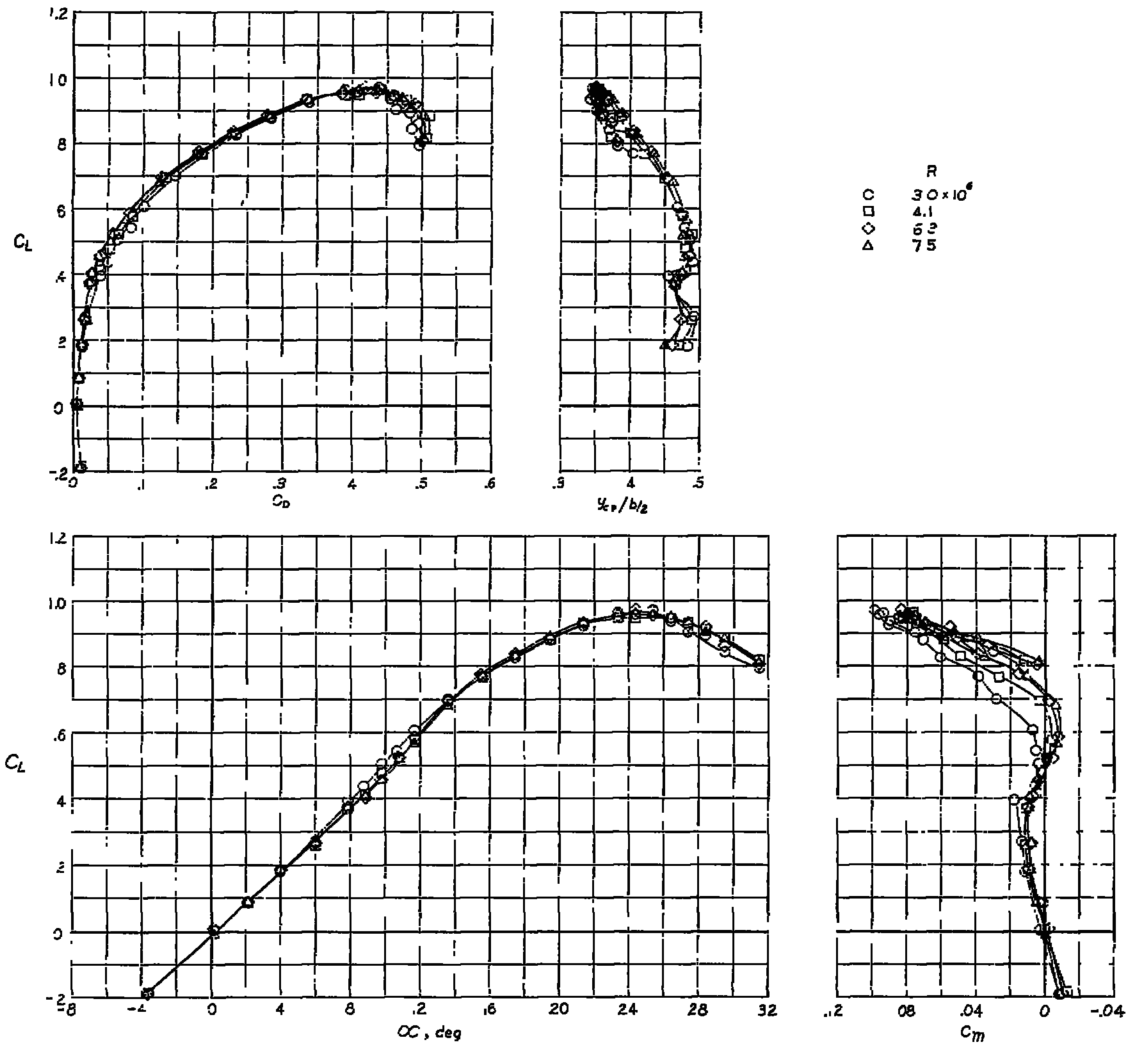


Figure 4.- Effect of Reynolds number on the aerodynamic characteristics of the basic wing.

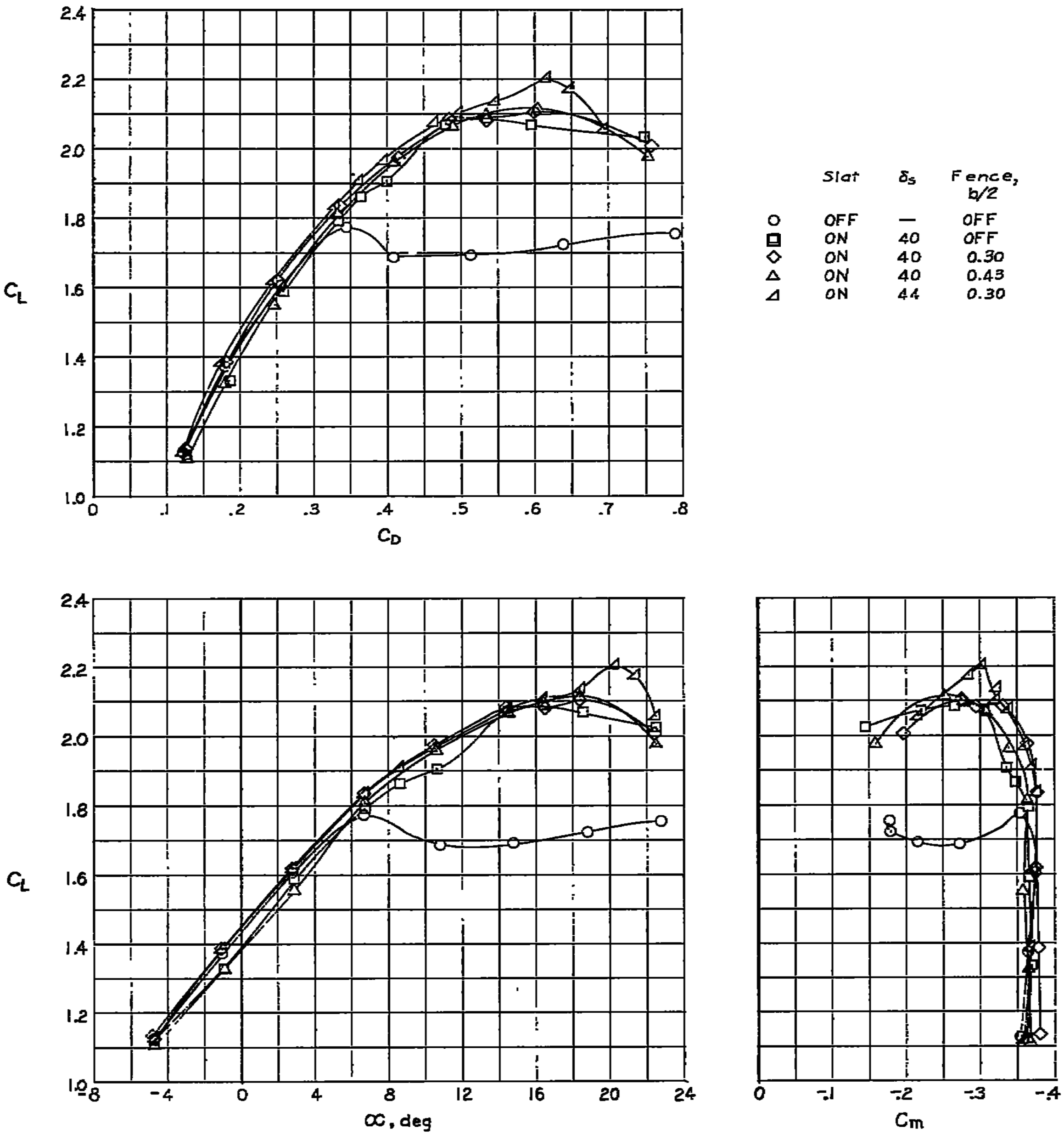


Figure 5.- Effect of 0.57b/2 slat and fences on the aerodynamic characteristics of the wing. 0.54b/2 flap; $\delta_f = 70^\circ$; $C_Q = 0.020$; $C_\mu = 0.370$; $R = 3.0 \times 10^6$.

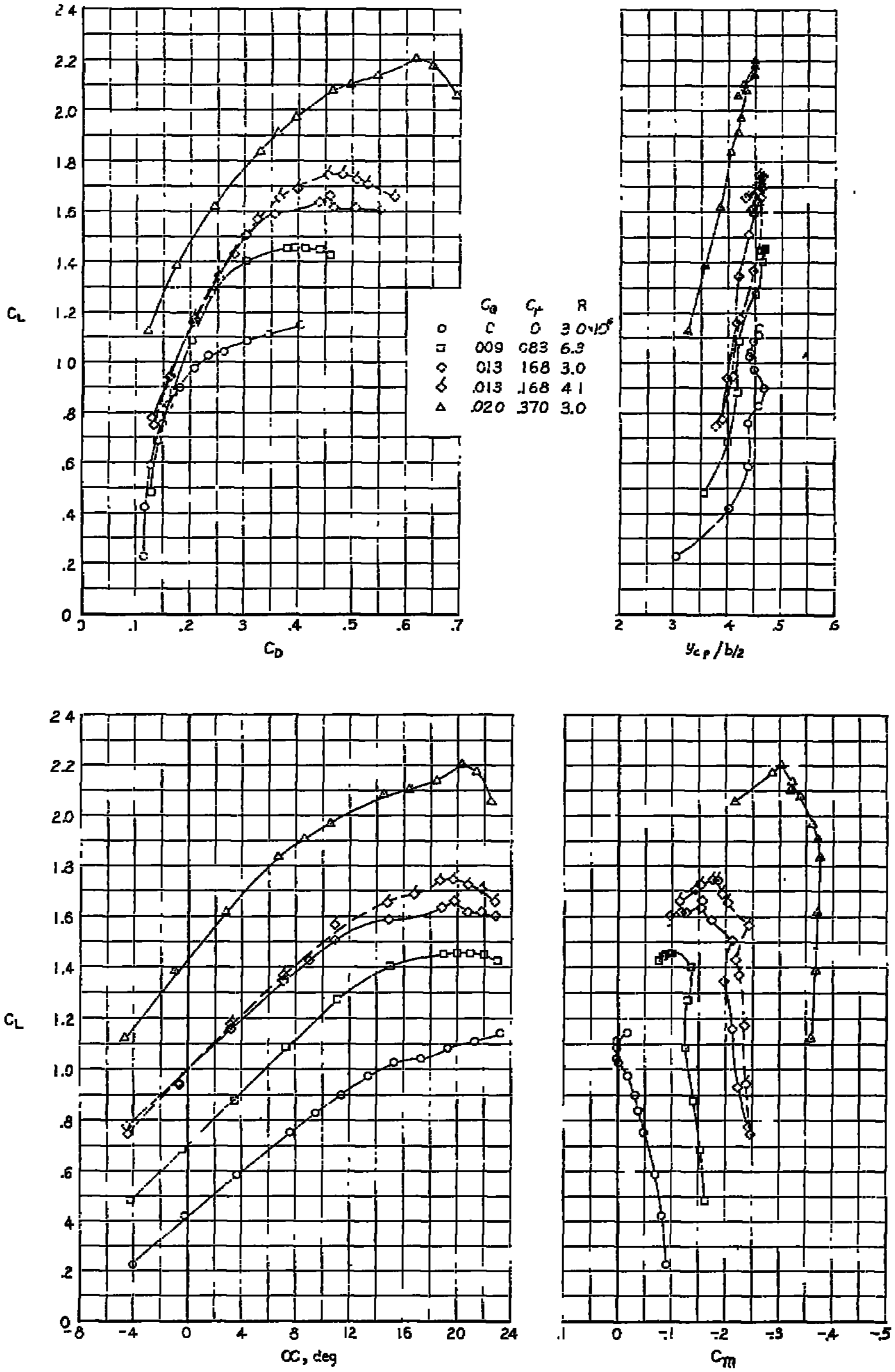


Figure 6.- Effect on the aerodynamic characteristics of the wing of varying C_Q and R. 0.54b/2 flap; $\delta_f = 70^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence.

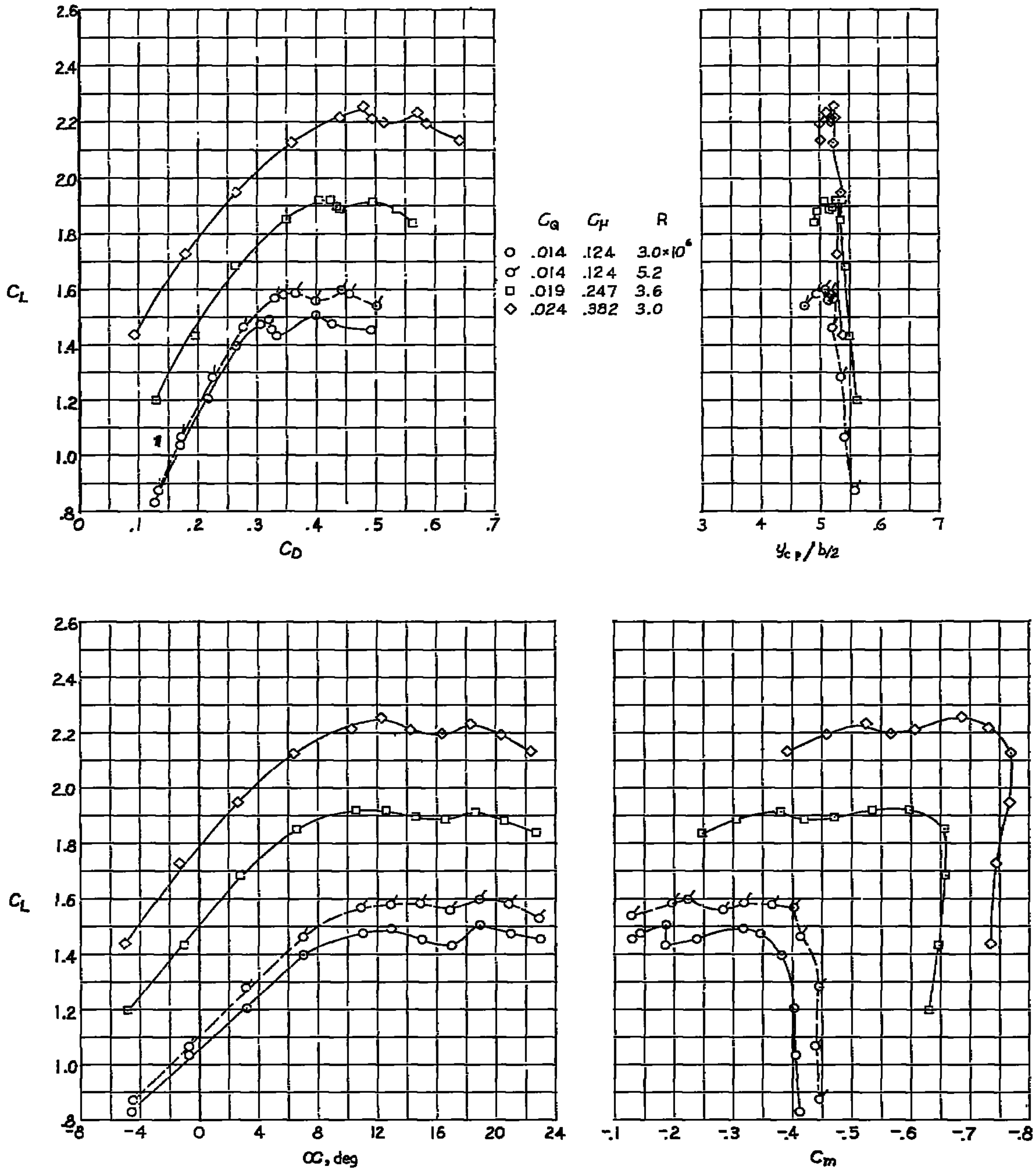
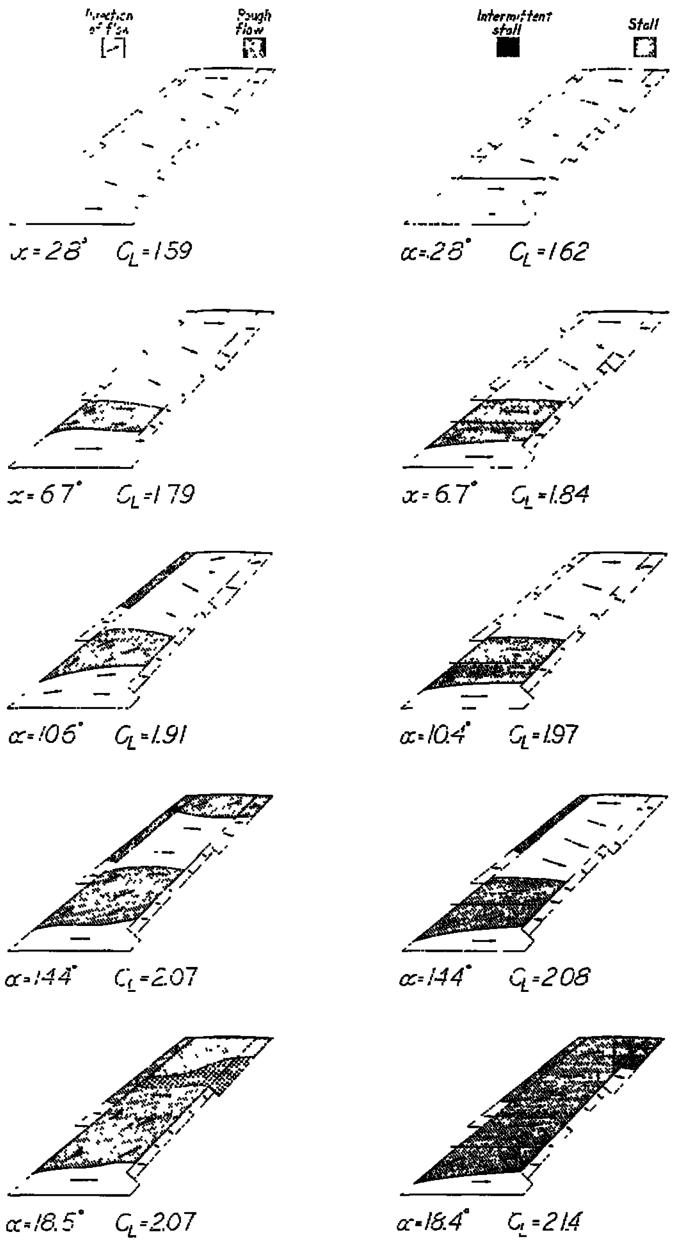


Figure 7.- Effect on the aerodynamic characteristics of the wing of varying C_Q and R. 0.84b/2 flap; $\delta_f = 65^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence.



(a) 0.57b/2 slat; $\delta_s = 40^\circ$; fence off.

(b) 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence.

Figure 8.- Flow observations. 0.54b/2 flap; $\delta_f = 70^\circ$; $C_Q = 0.020$; $C_\mu = 0.370$; $R = 3.0 \times 10^6$.

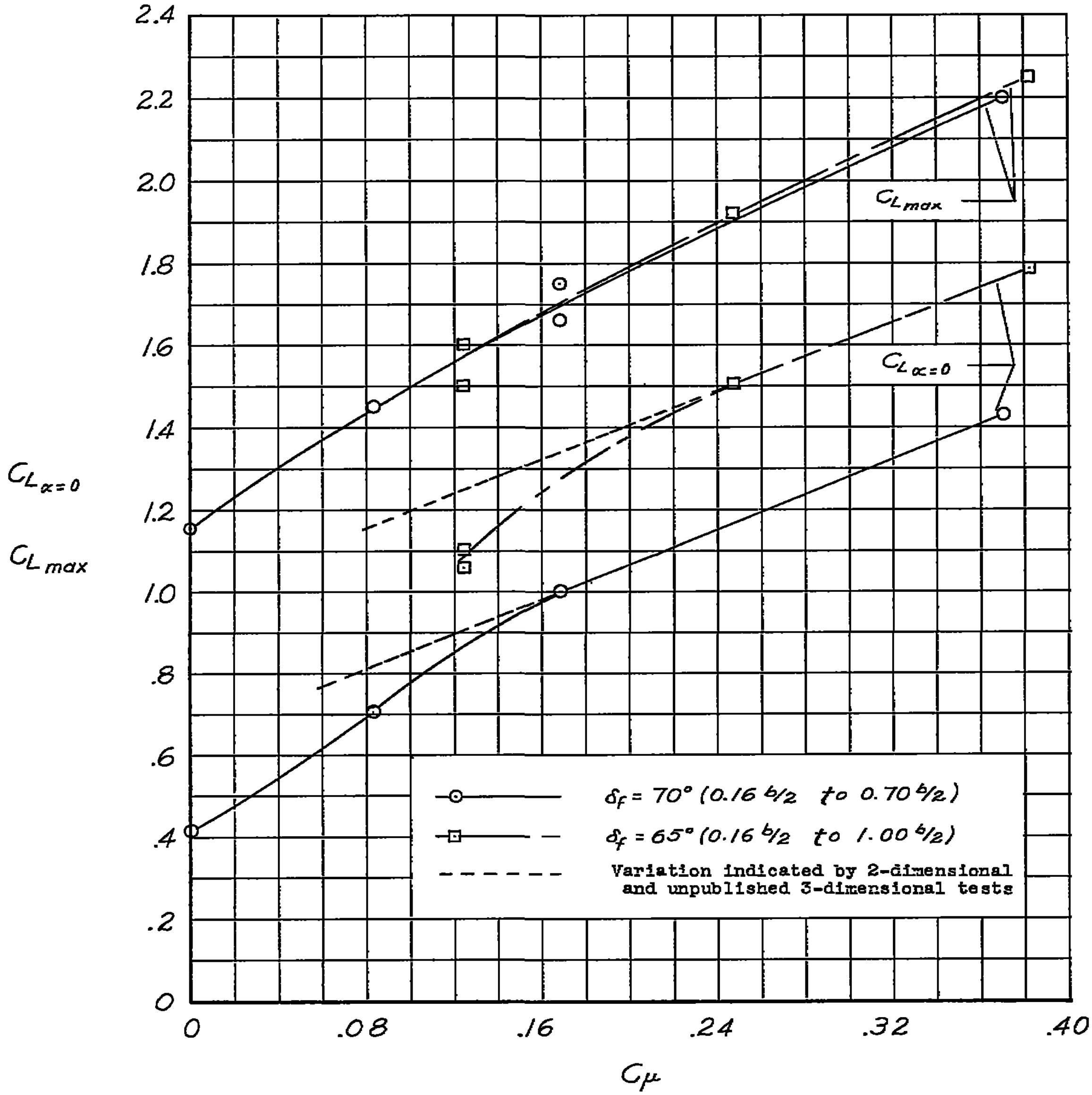


Figure 9.- Summary of $C_{L_{\alpha=0}}$ and $C_{L_{max}}$ through the C_μ range. 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30b/2 fence.

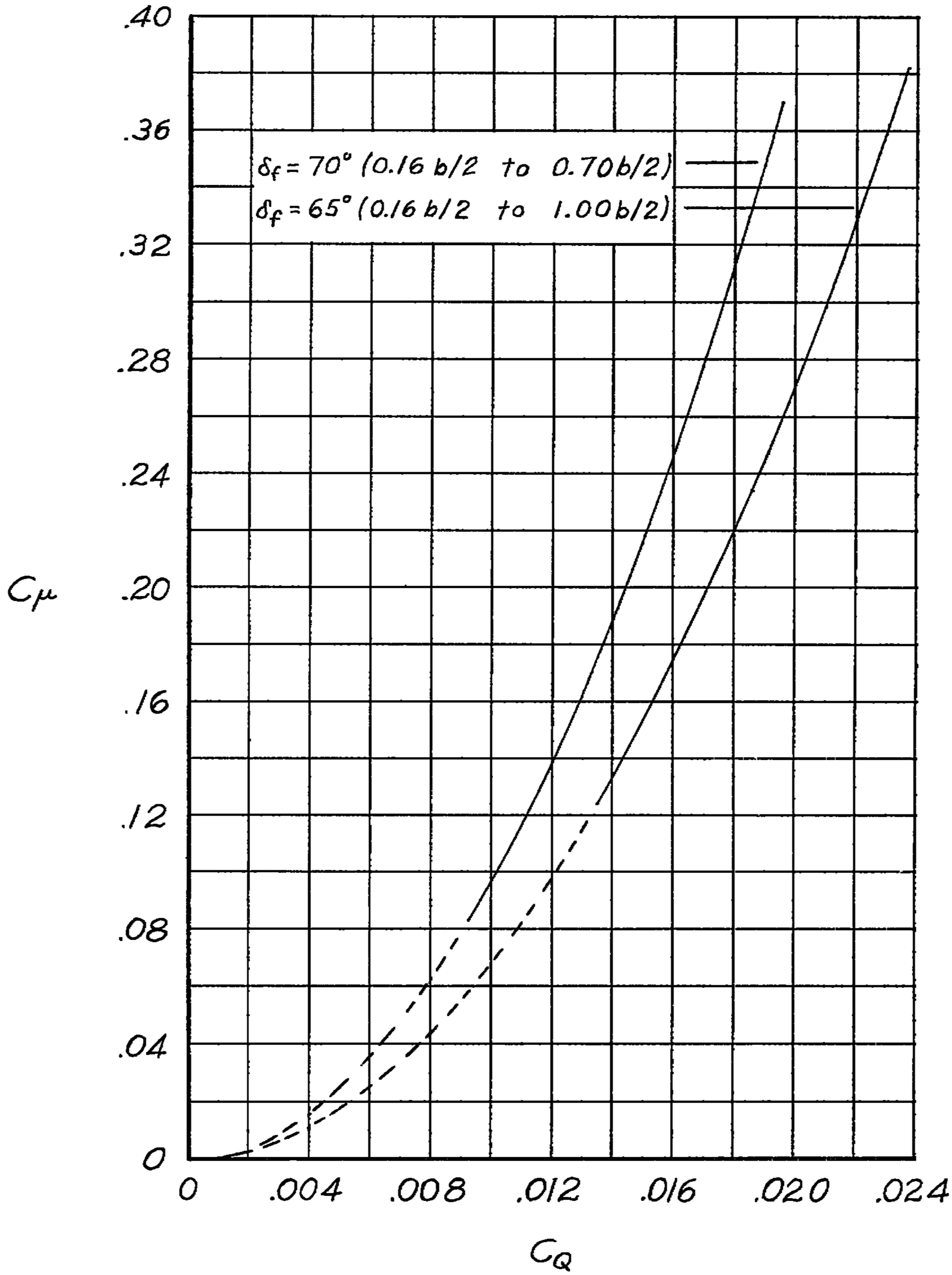


Figure 10.- Variation of C_μ with C_Q.

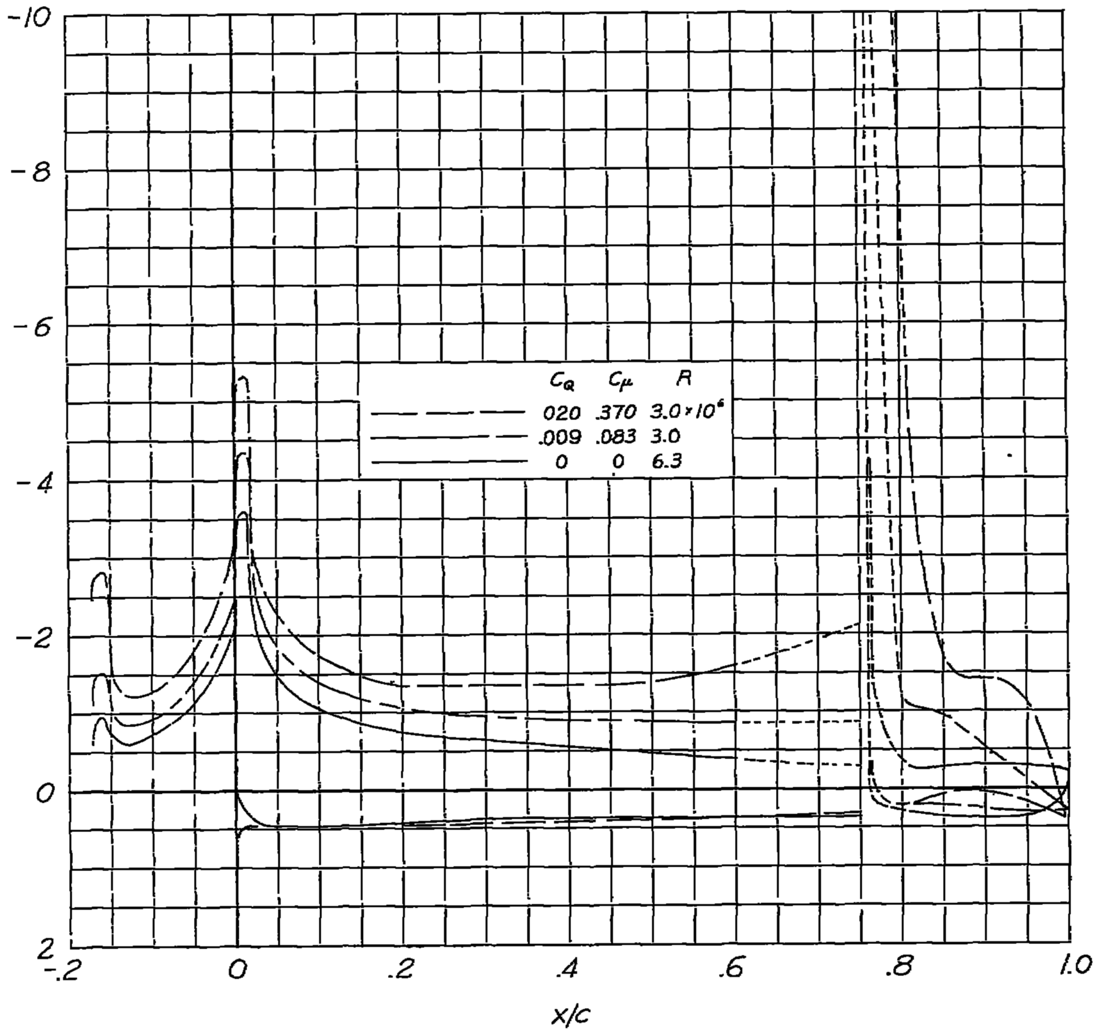


Figure 11.- Effect on the pressure distribution at the 0.60b/2 station of varying C_μ. 0.54b/2 flap; $\delta_f = 70^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $\alpha \approx 11^\circ$.

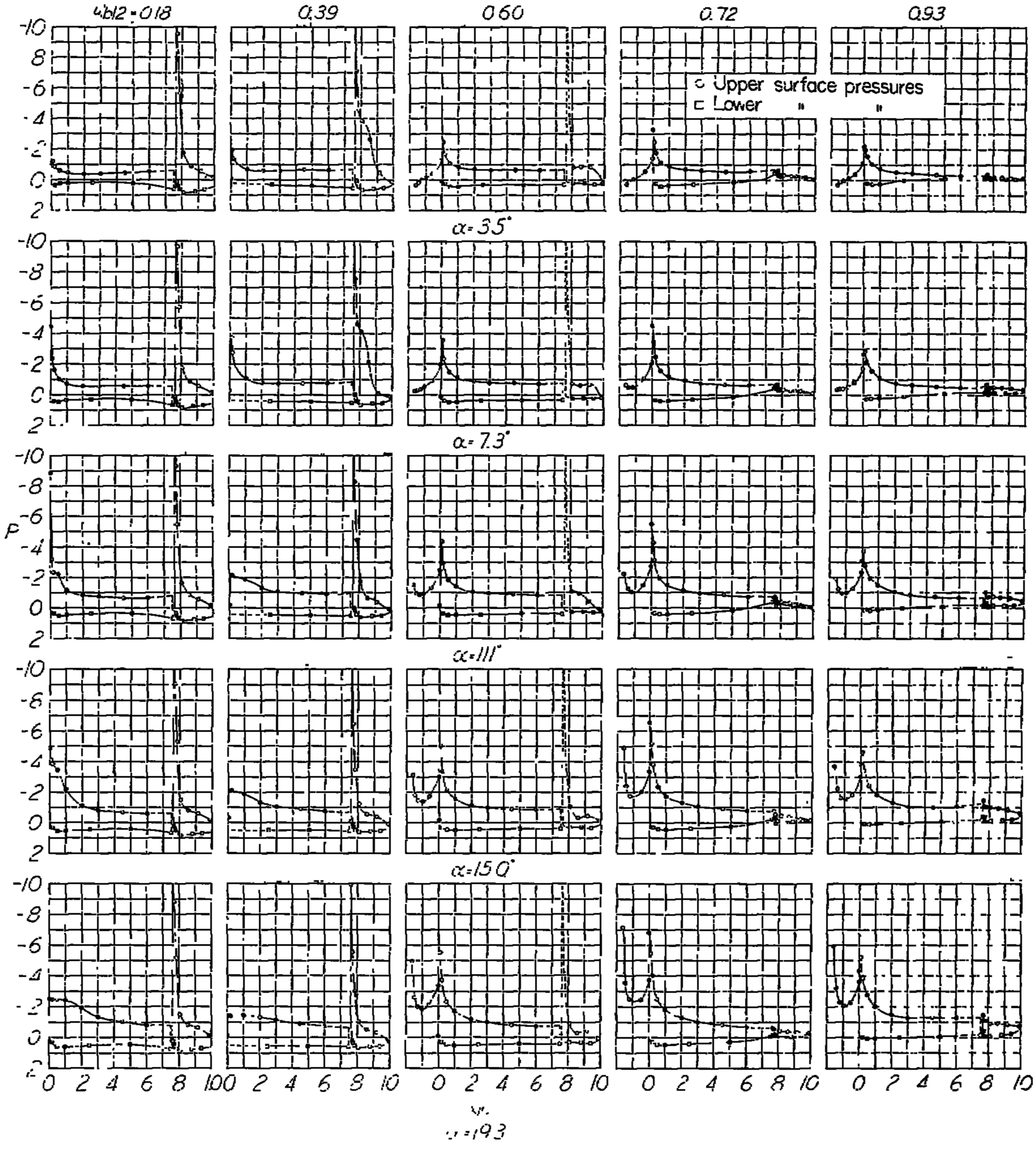


Figure 12.- Chordwise pressure distribution. 0.54b/2 flap; $\delta_f = 70^{\circ}$; 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30b/2 fence; $C_Q = 0.009$; $C_{\mu} = 0.083$; $R = 6.3 \times 10^{6}$.

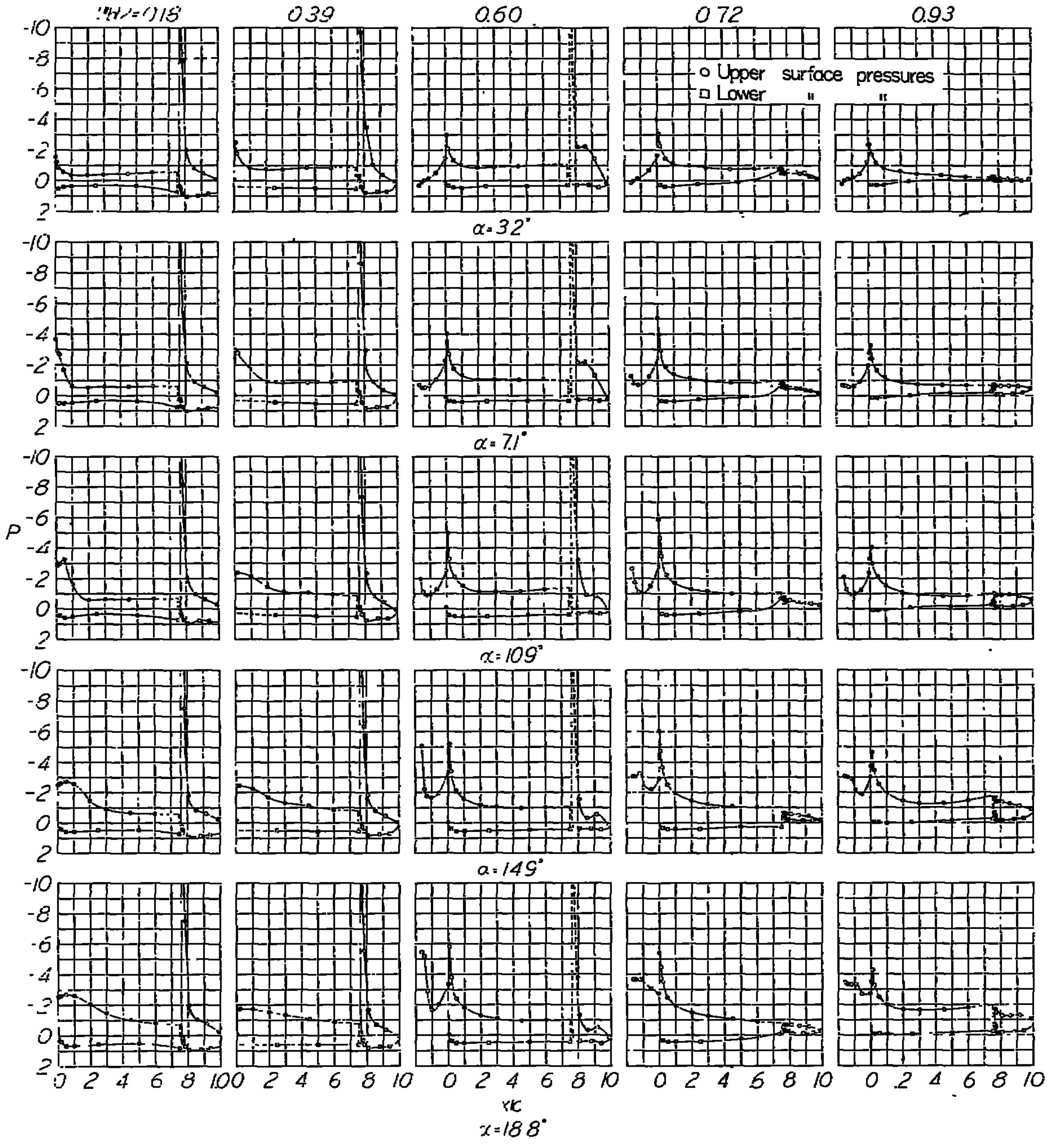


Figure 13.- Chordwise pressure distribution. 0.54b/2 flap; $\delta_f = 70^{\circ}$; 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30 b/2 fence; $C_Q = 0.013$; $C_{\mu} = 0.168$; $R = 3.0 \times 10^6$.

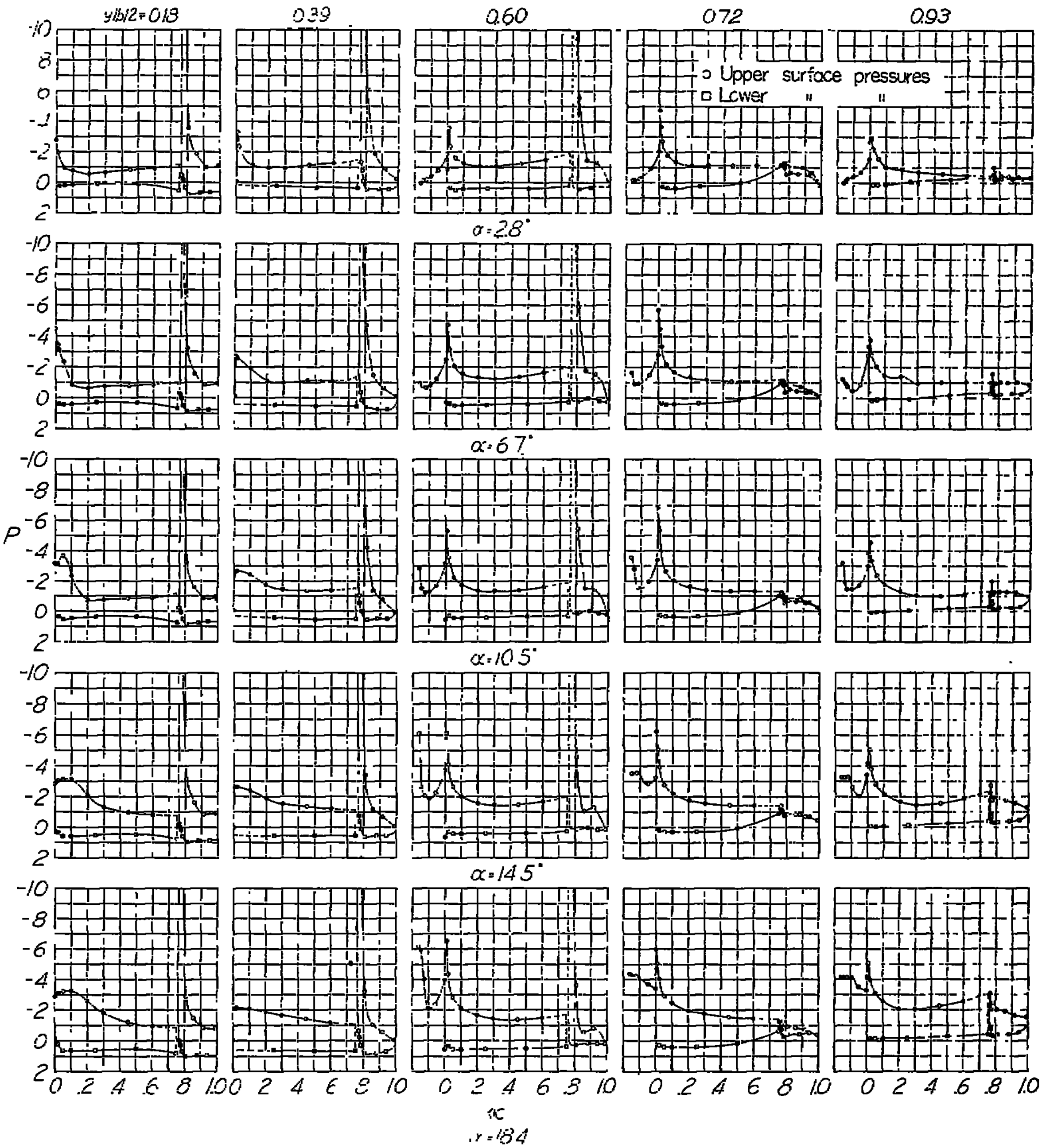


Figure 14.- Chordwise pressure distribution. 0.54b/2 flap; $\delta_f = 70^{\circ}$; 0.57b/2 slat; $\delta_s = 44^{\circ}$; 0.30b/2 fence; $C_Q = 0.020$; $C_{\mu} = 0.370$; $R = 3.0 \times 10^6$.

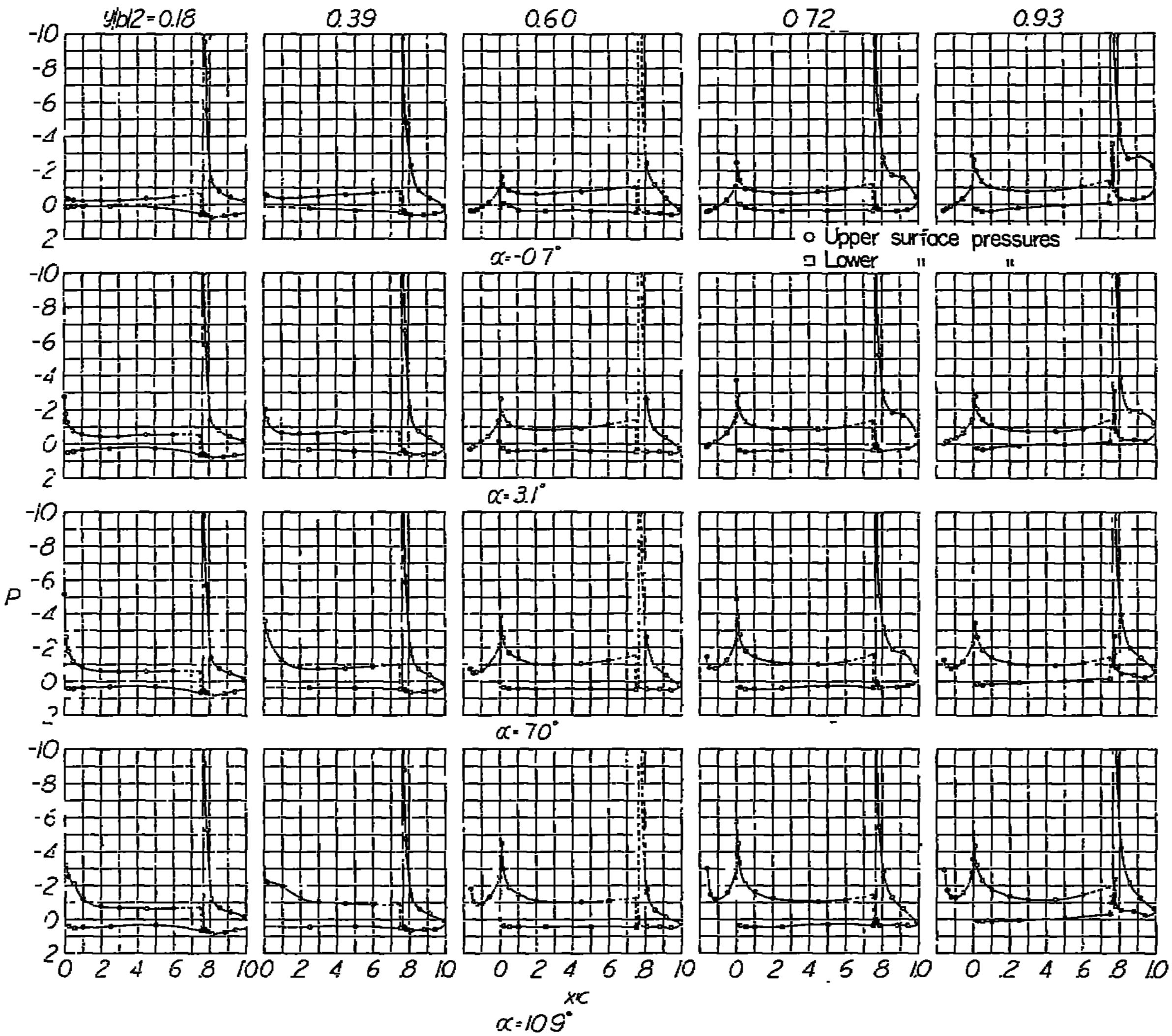


Figure 15.- Chordwise pressure distribution. 0.84b/2 flap; $\delta_f = 65^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.014$; $C_\mu = 0.124$; $R = 5.2 \times 10^6$.

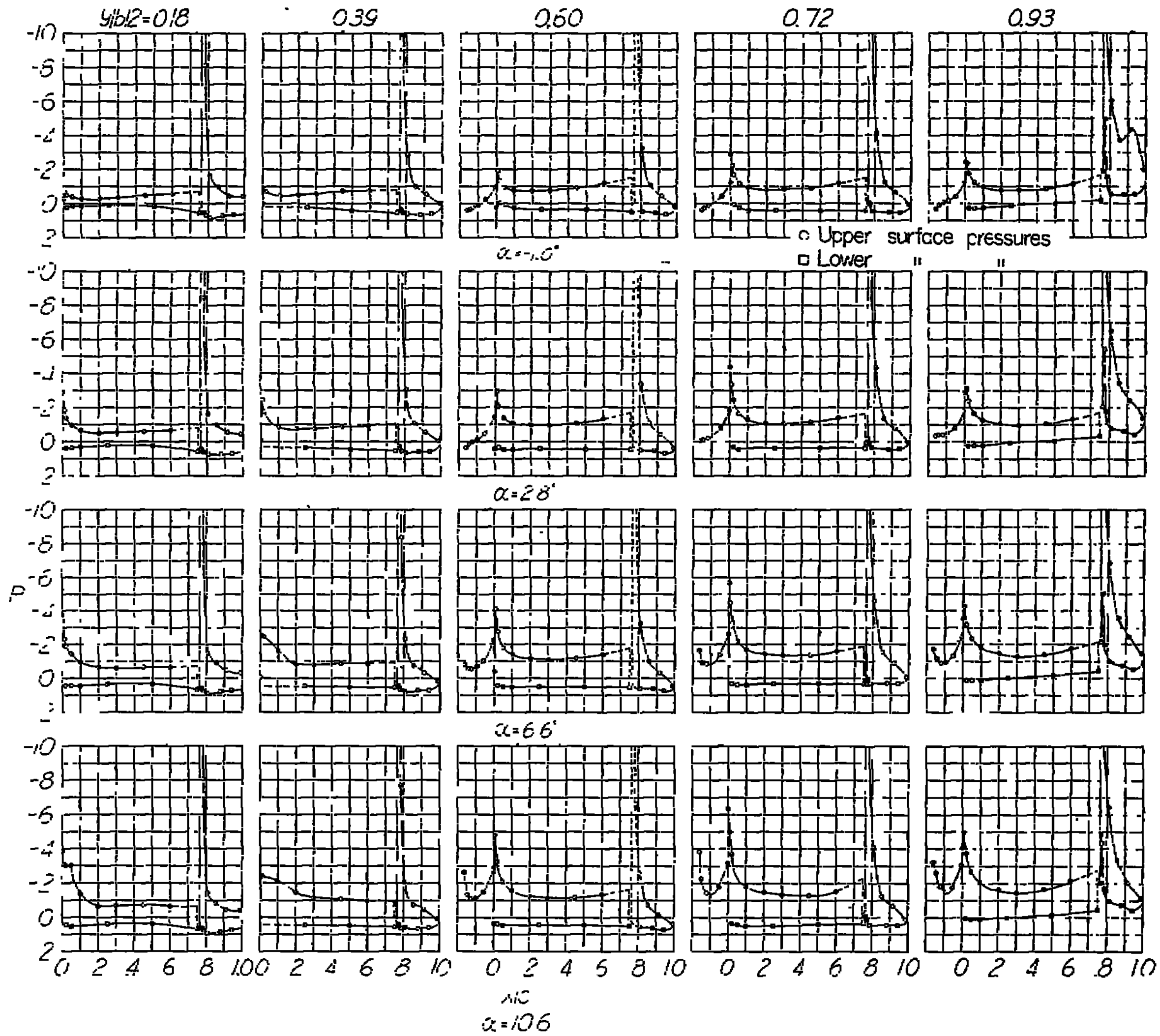


Figure 16.- Chordwise pressure distribution. 0.84b/2 flap; $\delta_f = 65^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.019$; $C_\mu = 0.247$; $R = 3.6 \times 10^6$.

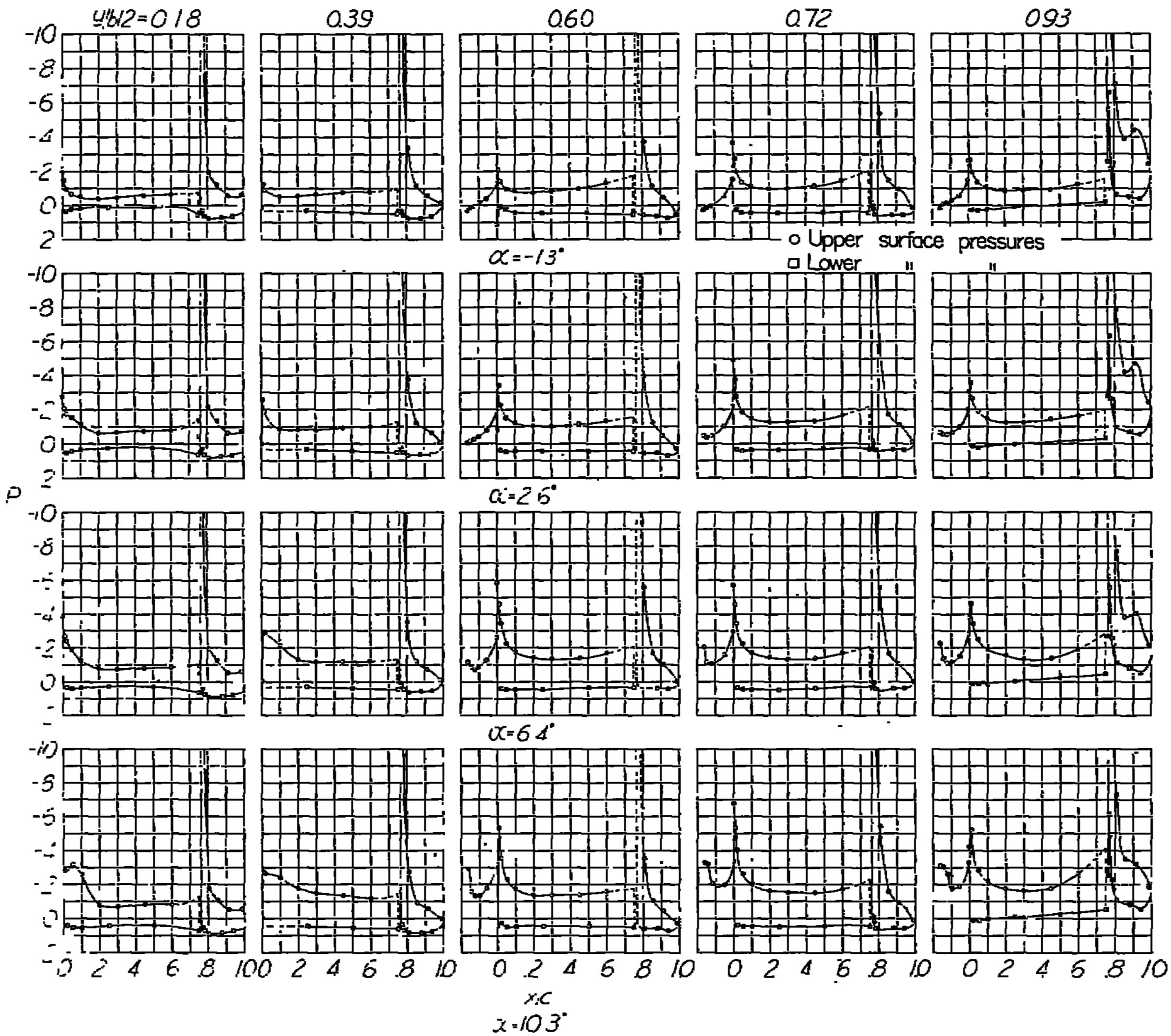


Figure 17.- Chordwise pressure distribution. 0.84b/2 flap; $\delta_f = 65^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.024$; $C_\mu = 0.382$; $R = 3.0 \times 10^6$.

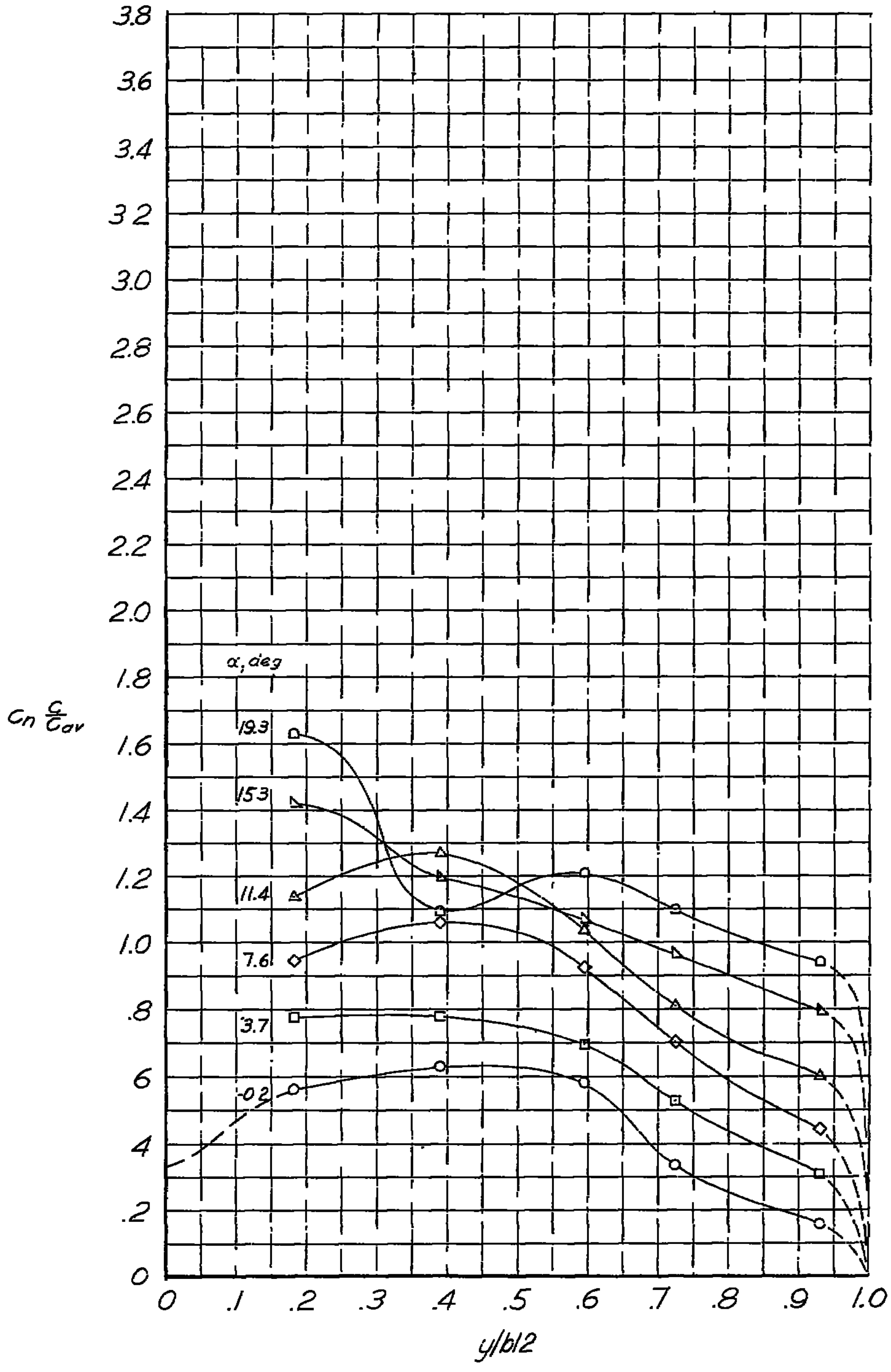


Figure 18.- Span loading. 0.54b/2 flap; $\delta_f = 70^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0$; $C_\mu = 0$; $R = 3.0 \times 10^6$.

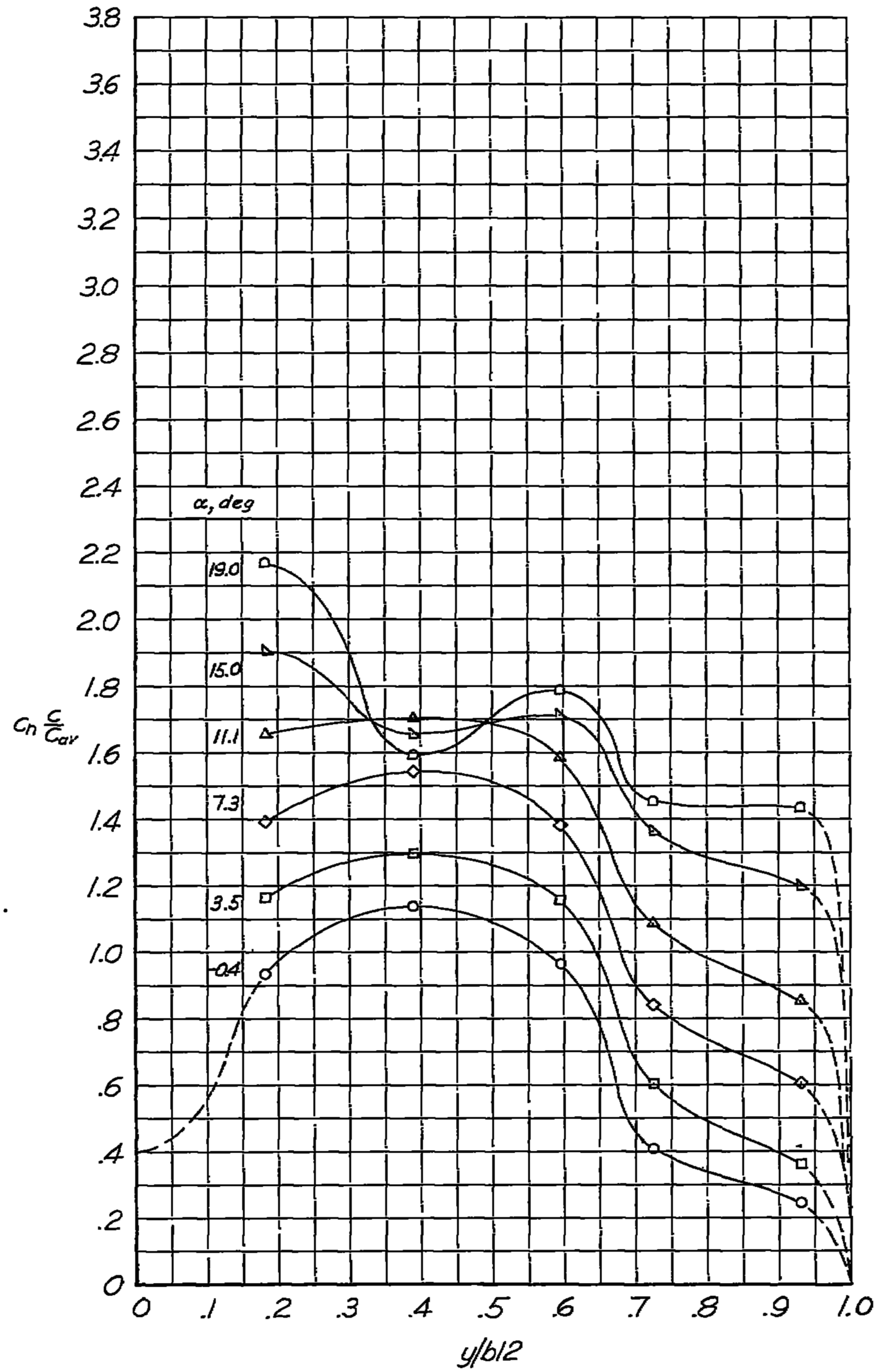


Figure 19.- Span loading. 0.54b/2 flap; $\delta_f = 70^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.009$; $C_\mu = 0.083$; $R = 6.3 \times 10^6$.

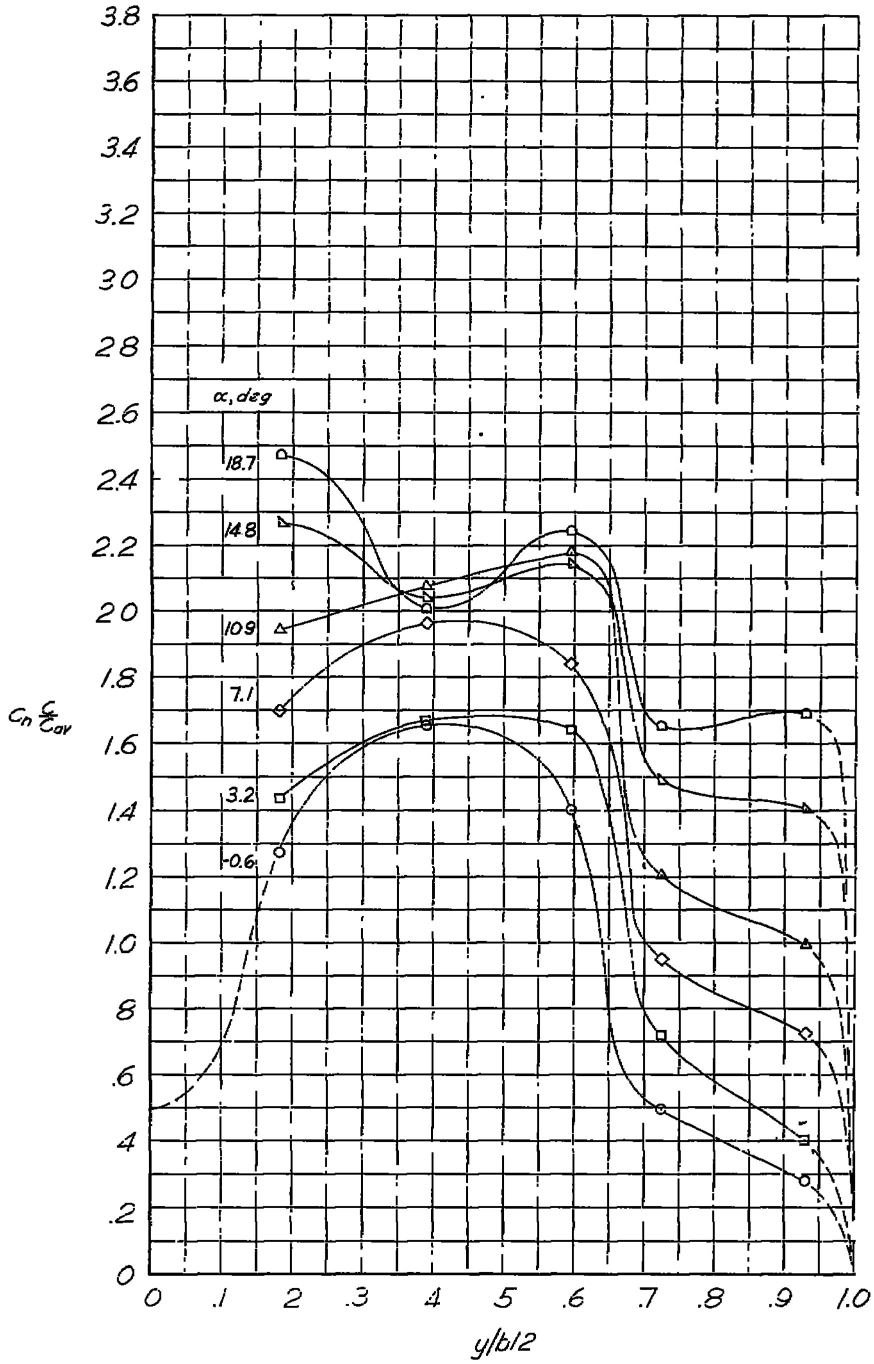


Figure 20.- Span loading. $0.54b/2$ flap; $\delta_f = 70^\circ$; $0.57b/2$ slat; $\delta_s = 44^\circ$; $0.30b/2$ fence; $C_Q = 0.013$; $C_\mu = 0.168$; $R = 4.1 \times 10^6$.

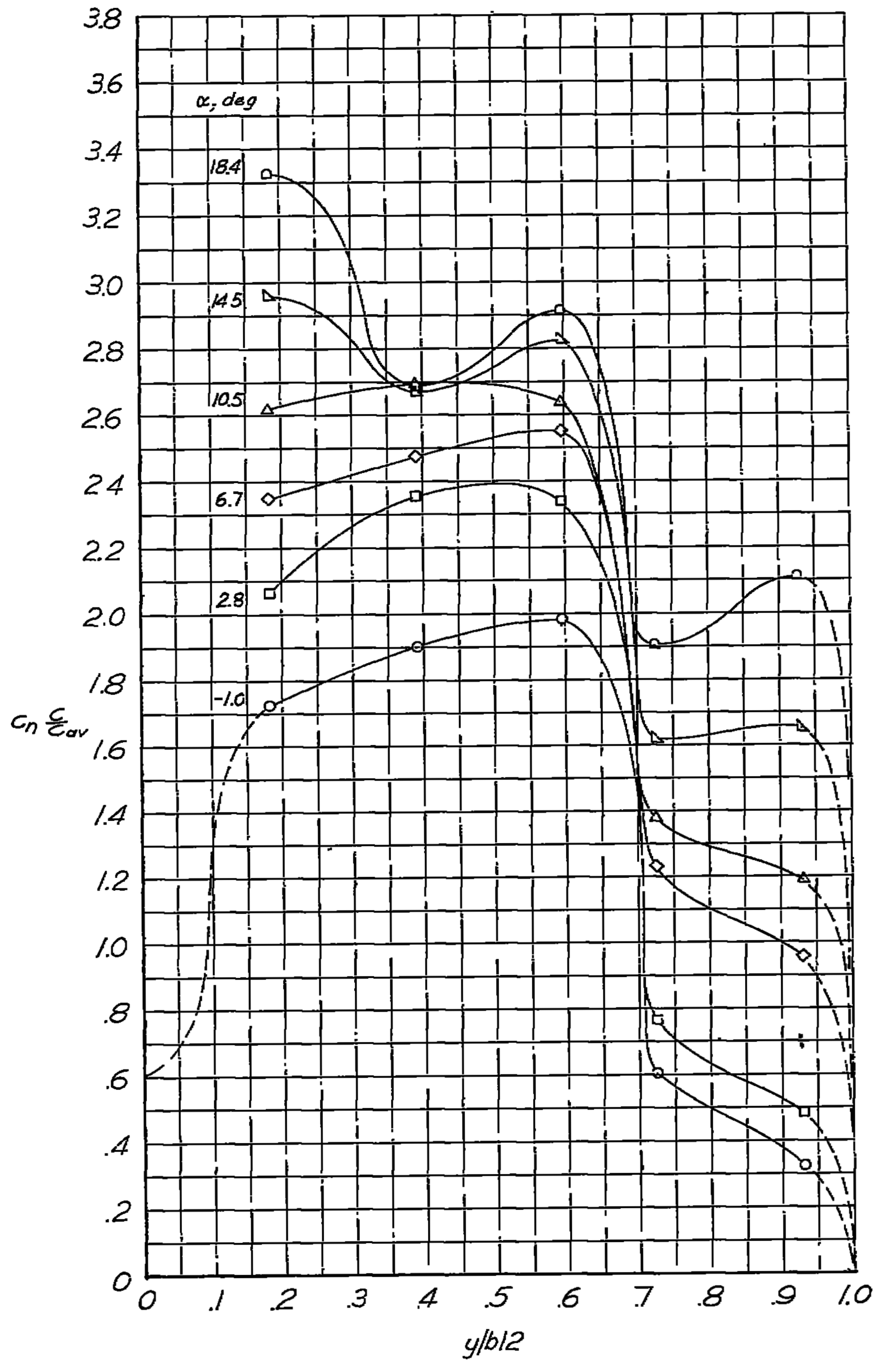


Figure 21.- Span loading. $0.54b/2$ flap; $\delta_f = 70^{\circ}$; $0.57b/2$ slat; $\delta_s = 44^{\circ}$; $0.30b/2$ fence; $C_Q = 0.024$; $C_{\mu} = 0.370$; $R = 3.0 \times 10^6$.

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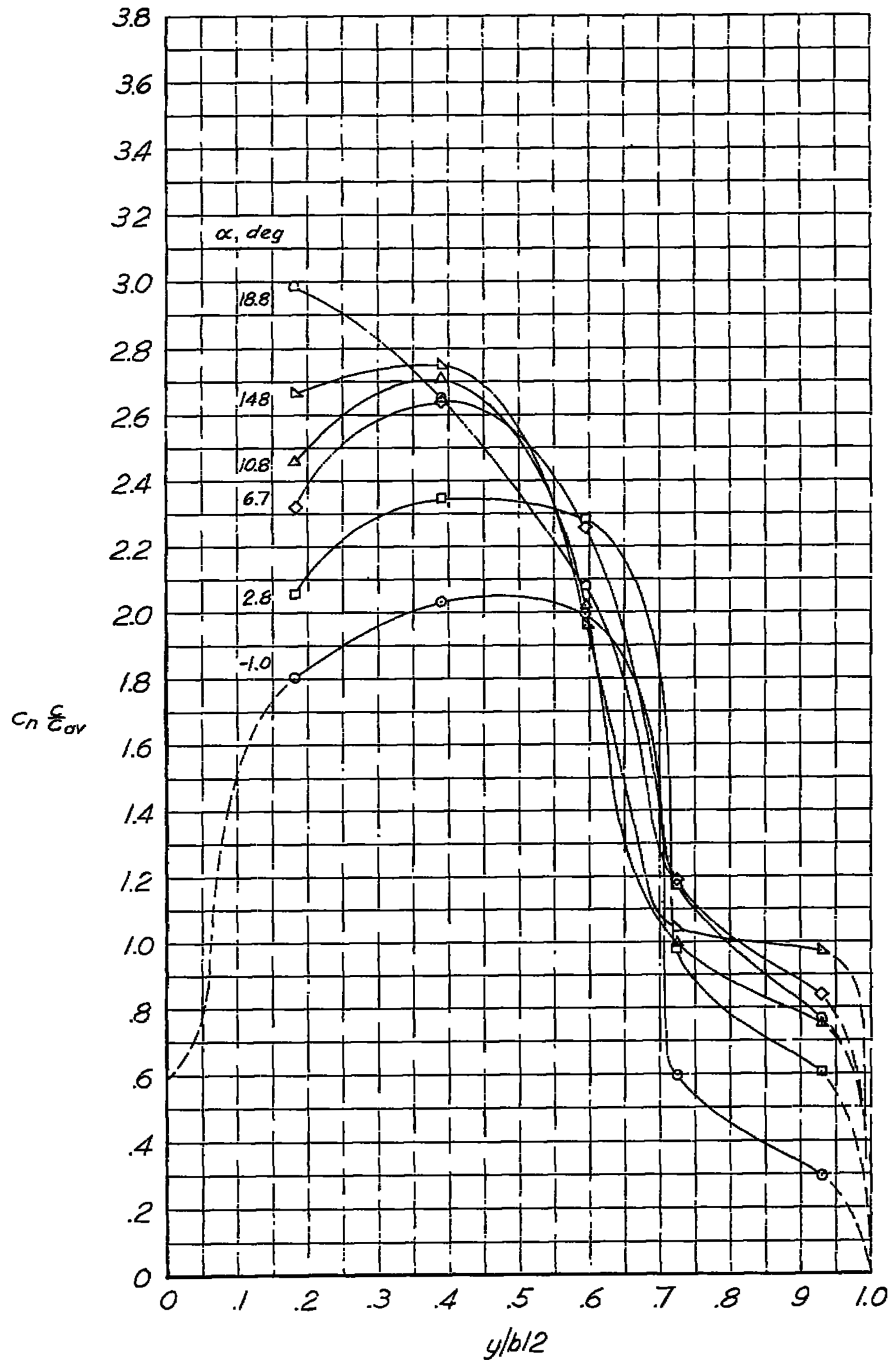

Figure 22.- Span loading. 0.54b/2 flap; $\delta_f = 70^\circ$; slat off; fence off; $C_Q = 0.024$; $C_\mu = 0.370$; $R = 3.0 \times 10^6$.

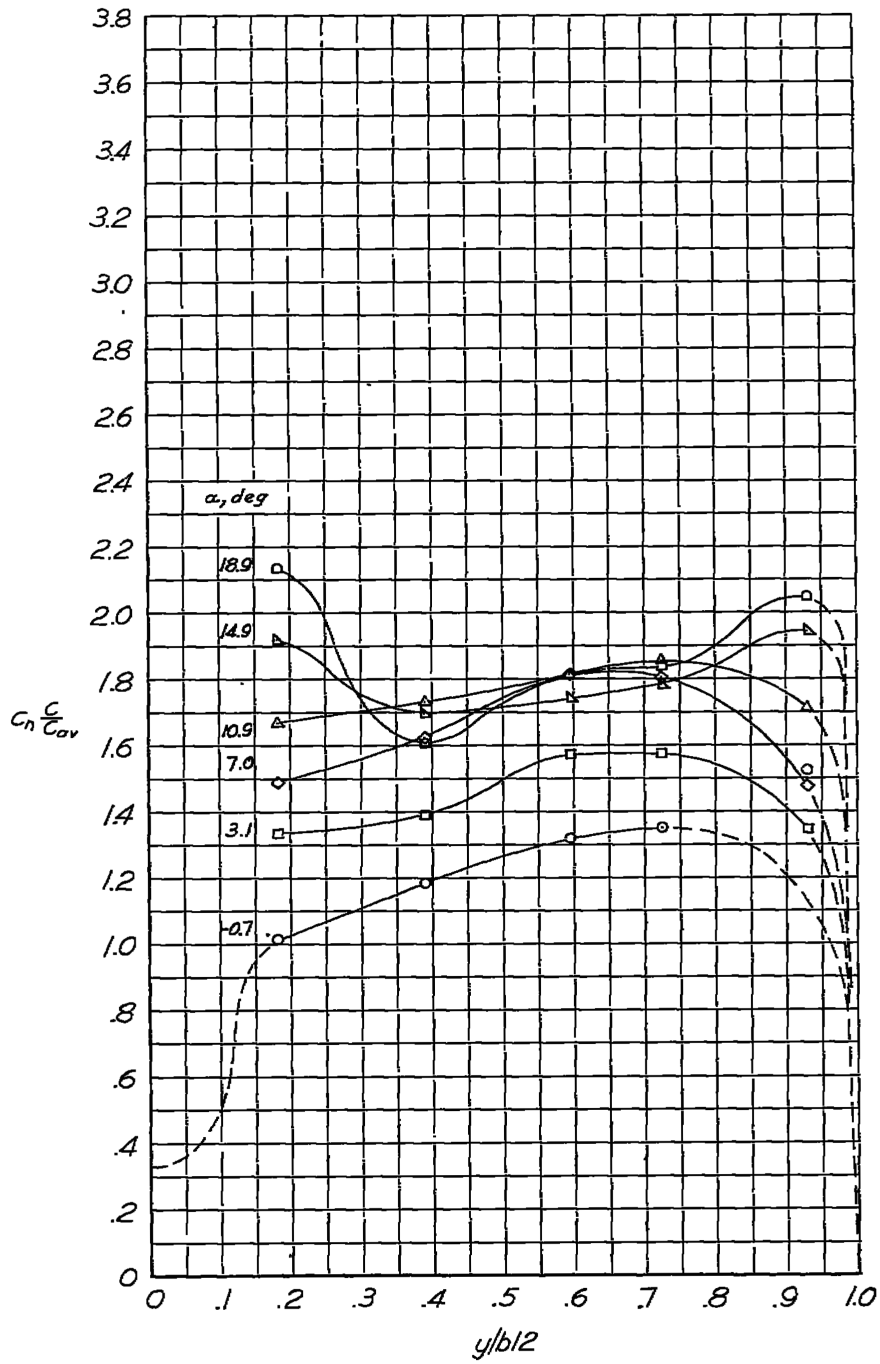

Figure 23.- Span loading. 0.84b/2 flap; $\delta_f = 65^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.014$; $C_\mu = 0.124$; $R = 5.2 \times 10^6$.

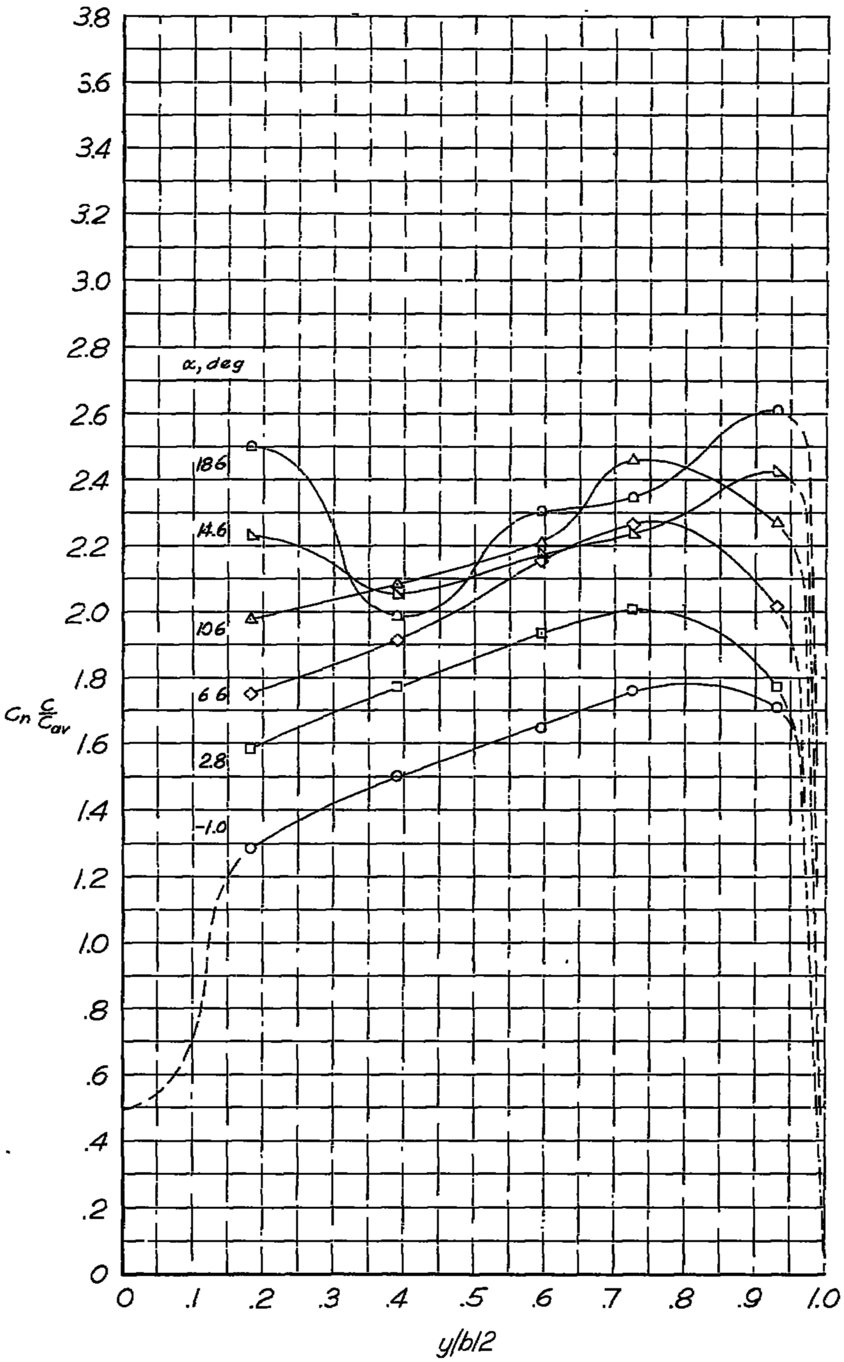

Figure 24.- Span loading. 0.84b/2 flap; $\delta_f = 65^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.019$; $C_\mu = 0.247$; $R = 3.6 \times 10^6$.

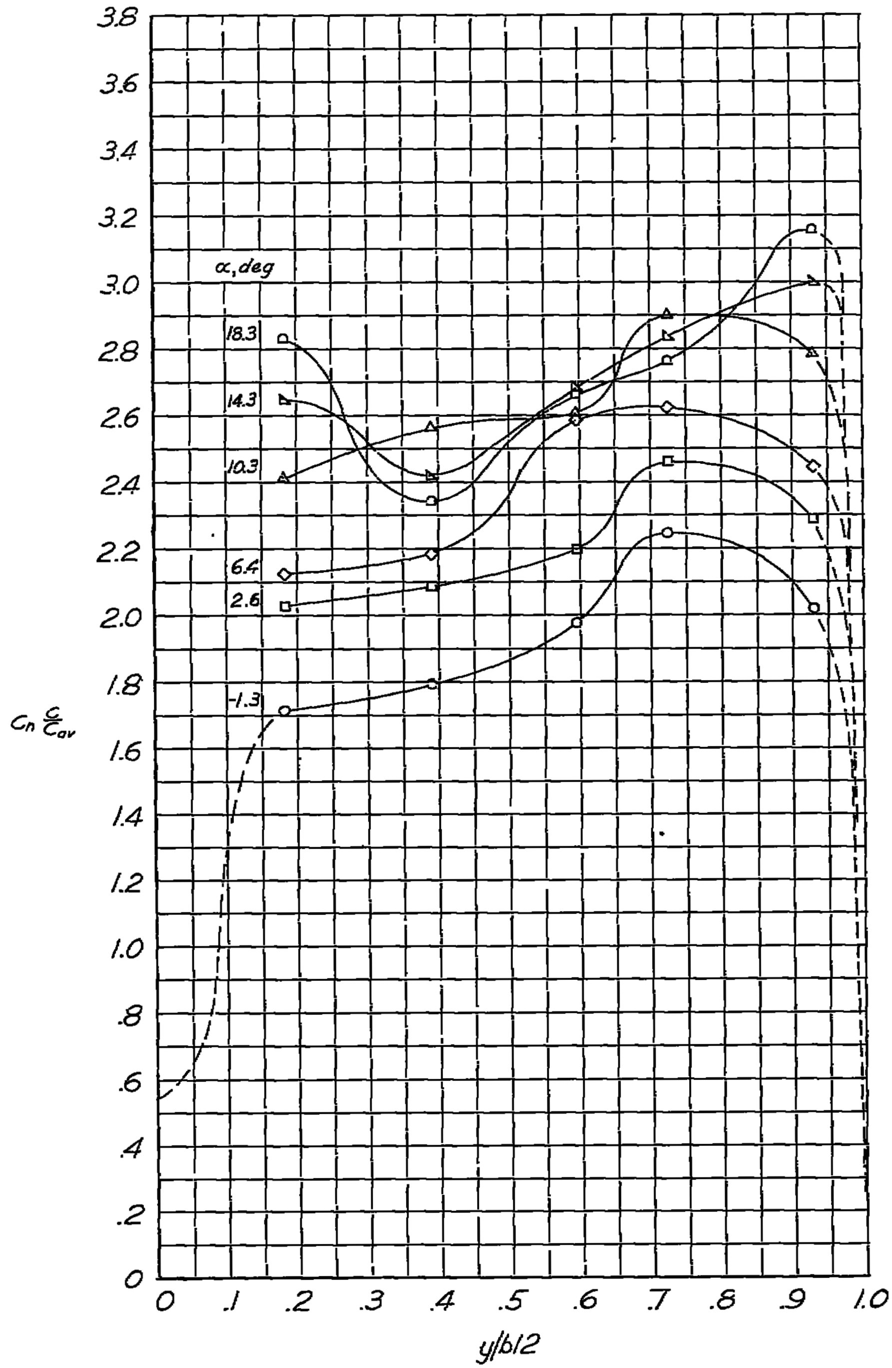

Figure 25.- Span loading. 0.84b/2 flap; $\delta_f = 65^\circ$; 0.57b/2 slat; $\delta_s = 44^\circ$; 0.30b/2 fence; $C_Q = 0.024$; $C_\mu = 0.382$; $R = 3.0 \times 10^6$.

[redacted]